

Contents

Information about written exam.....	3
Answers for interview questions	4
General Questions	4
Integrated curriculum	4
Teamwork -	6
Medical questions	8
First Aid.....	8
HIV and AIDS.....	9
Sexually Transmitted Diseases.....	13
Tuberculosis	15
Malaria	18
Diabetes mellitus	21
Hypertension	23
Food poisoning.....	25
Alcoholism	28
marijuana.....	29
Smoking	30
Typhoid fever	32
Cholera	33
Oral health.....	35
Nutrition	37
Healthy diet	38
Obesity	39
Maternal and child health.....	42
Sexual assault	42
Abortion	44
Family planning.....	46
Harmful Traditional practices	47
Early marriage	47

Abduction	49
Female genital mutilation (FGM),	49
Immunization	51
Breast and Complementary Feeding	52
Malnutrition.....	54
Protien energy malnutrition	54
Diarrhea.....	56
Public health.....	58
Health.....	58
Health Care System of Current Ethiopia.....	59
Epidemic.....	59
Latrine	61
Hand washing for hand hygiene.....	62
Global warming and its health effect	64
Exercise and its health benefit.....	65

INFORMATION ABOUT THE WRITTEN EXAM

Since most of the written exam is based on your previous grades am gone only mention the chapter that you should give emphasis on based on previous question that appeared on the exam. The written exam has four sections which are;

SECTION 1: English 20 - 30Q

- Analogy (like SAT)
- Grammar
- Dialogue
- Comprehension

SECTION 2: Biology question that mostly appear on the exam is from grade 9 and 10.

- Most question is from grade 9 and 10 chapter 3(human biology and health) from this chapter give emphasis to descriptive pictures because every year at least one picture is appearing.
- Give more emphasis on cardiovascular, digestive, and respiratory system .
- Read grade 9 chapter 4 (microorganism and disease) because it helps you to answer health related questions as well as some of the interview question.
- the first chapter of grade 11 biology text book (like about enzyme)
- After studying those chapter don't forget to see national exam question on those chapters.
- NB. The old grade 11 and 9 biology text books are very important.

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SECTION 3: chemistry 20 - 30Q

- Unit one of grade 11 chemistry text book –concepts like , significance number ,precision ,accuracy.
- Hybridization , configuration(esp: the S,L,P,D and f), some theories (like daltonn's , boyle's , Graham's gas diffusion)
- Molarity, molality, stechiometric relationship(like mole – mole,mass-volume)
- Acid – base equilibra (pH, buffering system ,salt, strength of acid and bases
- Reaction-rxn rate mechanism, each parameters of rxn.
- After studying those chapters please do not forget to see entrance exam questions.
- Chemistry questions are also 30 in no.

SECTION 4 : Common clinical – 10 - 15Q

- concepts that are related to First Aid like:

e.g. what do you do if someone is bleeding in front of you?

2. What should you be your advice to patient with common cold, HIV, Ebola virus, Zika virus, Malaria, Tuberculosis, and the likes not to transmit it to other?

Interview question answer

General Questions

Integrated curriculum

The college has a curriculum with an integrated approach in which the **basic sciences are taught simultaneously with clinical and community medicines** unlike the other medical schools in Ethiopia. It is described in terms of learning outcomes, which define the knowledge, skills and attitudes [behaviors]. There are **six modules** that are supposed to be covered with in the first eighteen months of the training along with the clinical and community practices. They will be followed by the **clinical years and internship** trainings that totally cover five and a half years to graduate as a medical doctor. The other feature that is peculiar to the Millennium Medical School curriculum is the **special admission criteria** that were set for the enrolment of almost **equal number of female students** with males and the quota system used for the students from four emerging regions of the country.

Rationale of Curriculum

- The feedbacks on discipline-oriented curricula showed that they include **unnecessary repetitions**, overlaps of topics, content gaps and compartmentalization of knowledge (Harden, 2000). But medical students need to fit things together.
- A study by Schmidt(1990) on a test that measured the diagnostic abilities, those students at the medical school with an integrated curriculum performed significantly better than the other two groups { traditional discipline oriented and PLB} in the second and third curriculum years.
- Researchers in medical education recommend the integrated approach stating the following advantages over the traditional discipline-specific curriculum (Smith, 2005):
 - Students are expected to **integrate new learning** with previous knowledge in any curriculum structure. Creating a curriculum that helps all students (average or bright) to form those **connections** through an integrated approach makes learning easier and more effective.
 - Students can learn the basics more easily when related subjects are learned together and put in a relevant context.
 - The very nature of an integrated approach results in extensive learning. It enables the learners to delve deeply **by exploring relationships** and explaining phenomena in a richly textured way.

- An integrated curriculum invites and encourages the learners to explore new areas, to pursue a line of inquiry and the web of knowledge on their own, constructing their own meaning in the process. Teachers can facilitate the journey without having to be the source of all knowledge.

- It was also recommended that the medical schools in Ethiopia should steer up their development and innovation in the direction of integrated, problem based and student centered learning and teaching (Giday, 2002).

- Hence, the first curriculum in its kind in the history of medical education in Ethiopia with an integrated and student centered approach was developed for its innovative implementation at St. Paul's hospital millennium medical collage.

Teamwork - is "work done by several associates with each doing a part but all subordinating personal prominence to the efficiency of the whole".

In a business setting accounting techniques may be used to provide financial measures of the benefits of teamwork which are useful for justifying the concept. Teamwork is increasingly advocated by health care policy makers as a means of assuring quality and safety in the delivery of services.

In health care, a systematic concept analysis in 2008 concluded teamwork to be "a dynamic process involving two or more healthcare professionals with complementary backgrounds and skills, sharing common health goals and exercising concerted physical and mental effort in assessing, planning, or evaluating patient care." Elsewhere teamwork is defined as "those behaviours that facilitate effective team member interaction," with "team" defined as "a group of two or more individuals who perform some work related task, interact with one another dynamically, have a shared past, have a foreseeable shared future, and share a common fate.

Larger groups---- produce diminished member satisfaction. In health, the group is usually small. A group of people not more than seven is adequate.

Health team - is a special type of group. purpose---to improve and maintain the health of the community.it is composed of different categories of H.W. many health professionals are difficult to deal with alone

Value of health teams

1. provide support & encouragement
2. To share experience and skills
3. To overcome difficult
4. A source of resources

Effective Team work

1. Team spirit
2. Small group
3. Participation
4. frequent and multi-lateral communication
5. Continuity--support

Benefits of Teamwork

- **Problems solving:** A single brain can't bounce different ideas off of each other. Each team member has a responsibility to contribute equally and offer their unique perspective on a problem to arrive at the best possible solution. Teamwork can lead to better decisions, products, or services. The **quality of teamwork** may be measured by analyzing the following six components of collaboration among team members: **communication, coordination, balance of member contributions, mutual support, effort, and cohesion.**
- **Accomplish tasks faster:** A single person taking on multiple tasks will not be able to perform at a same pace as a team can. When people work together they can complete tasks faster by dividing the work to people of different abilities and knowledge.
- **Healthy competition:** A healthy competition in groups can be used to motivate individuals and help the team excel.
- **Developing Relationships:** A team that continues to work together will eventually develop an increased level of bonding. This can help people avoid unnecessary conflicts since they have become well acquainted with each other through team work. **Team members' ratings of their satisfaction with a team is correlated with the level of teamwork processes present.**
- **Everyone has unique qualities:** Every team member can offer their unique knowledge and ability to help improve other team members. Through teamwork the sharing of these qualities will allow team members to be more productive in the future.
- **In healthcare:** teamwork is associated with increased patient safety.

Things to Avoid

- Teamwork may have an "unintended effect of fermenting hostility toward the managerial goal of making the teams fully self-managing."
- There is a potential of "social loafing" (i.e., an individual's doing less work in a team than what he/she would normally do working individually).

Medical questions

FIRST AID (The primary survey) should identify life threatening injuries such as-

Airway obstruction, Chest injuries with breathing difficulties, Sever external or internal haemorrhage, Other injuries.

What is ABCDE survey.

A = airway - Asses the airway. Can the patient talk & breathe freely? If obstructed the steps to be considered are, Chin lift / jaw thrust, Suction, Application of airway, Intubation.

In assessing the airway, always recognize the potential for cervical spine injuries.

Movement of the cervical spine should be avoided or at least minimized when performing airway maneuvers.

B= breathing- Assessment of breathing.

Is it adequate or not ? If inadequate, the steps to be considered are, Decompression & drainage of tension pneumothorax / haemothorax, Closure of open chest injuries, Artificial ventilation.

C= circulation - Asses circulation if inadequate.

Stop external haemorrhage , Establish 2 large- bore IV lines (14 or 16 G), Administer fluid or blood if available.

In case of cardiac failure – cardiopulmonary resuscitation (CPR).

D = disability - rapid neurological assessment.

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A = awake V = verbal response

P = painful response U = unresponsive

E = exposure - Undress the patient & look for injury

HIV and AIDS — HIV is the name of a virus that can affect the body's infection-fighting system. Doctors call the infection-fighting system the "immune system." When people have untreated HIV infection, they can become sick easily, because their immune system cannot work as well to fight off infections or cancer. But people with HIV can take medicines to control the virus, keep their immune system strong, and stay healthy for many years. People can become **infected with HIV** if blood or body fluid (like semen) from a person with HIV enters their body. For example, a person can get HIV by:

Having sex without using a condom with someone who has HIV

Sharing needles or syringes with someone who has HIV

What is AIDS? — AIDS is the term doctors use to describe the last stage of HIV infection when the immune system is very weak.

What are the symptoms of HIV? — Early symptoms of HIV infection can occur within weeks or months of being infected with the virus. These can include: Fever, sore throat, headache, muscle pain, and joint pain (these symptoms usually last about 2 weeks). Swelling of pea-shaped organs under the skin called lymph nodes, usually in the neck or armpit (this symptom can also happen in people who have HIV for a long time), A rash that is usually on the face, neck and upper chest

People who have had HIV for many years might have other problems, such as: Fever, stomach pain, nausea, vomiting, diarrhea, and weight loss, Other infections, including: Lung infections, Brain infections, Eye infections that cause trouble seeing, Yeast infections in the mouth that can cause soreness and raised, white patches

HIV TESTING METHODS — There are several methods to test for HIV. All positive tests are confirmed with another test. **Rapid tests** — Rapid tests for HIV use saliva or blood from a finger prick. These tests provide results within 5 to 40 minutes and are useful because they do not

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require that you go back on another day for your results. A positive result requires another test to confirm the result. A negative test does not have to be confirmed.

Standard tests — The standard HIV test uses a sample of blood taken from a vein. The results are usually available in a few days.

How is HIV treated? — Doctors can prescribe different combinations of medicines to treat HIV. Doctors call these medicines “antiretroviral medicines.” You and your doctor should work together to decide when you should start treatment and which medicines are right for you.

cART/HAART is the cornerstone of management of patients with HIV infection.

Controls HIV replication

Allows the body to rebuild its immune system (its ability to fight infections)

Reduces the chance that a mother will pass HIV to her baby during pregnancy, birth or breastfeeding.

Your treatment will depend a lot on:

How your immune system is working – Doctors use a blood test called a T-cell count(CD4) to see how HIV is affecting your immune system. Your age, Any other medical problems you might have

Most people with HIV need to take pills at set times each day. It is important to follow all of your doctors’ instructions about treatment. This is because your HIV can get worse if you skip or stop taking your medicines. Let your doctor know if you have any side effects or problems with your medicines.

Some people with HIV also take other types of medicines every day to prevent HIV-related infections. For example, most doctors recommend that people with a low T-cell count take an antibiotic every day to keep from getting a lung infection called PCP(PNEUMOCYSTIS PNEUMONIA).

What if I am pregnant or want to get pregnant? — If you have HIV, your baby can become infected with HIV during pregnancy, birth, or through breastfeeding. If you are pregnant or want

to get pregnant, talk with your doctor about ways to reduce the chance of passing HIV to your baby.

What can I do to prevent spreading HIV to other people? — You can help reduce the chance of spreading HIV to other people by: Getting tested for HIV and starting treatment as early as possible, Telling anyone you have sex with that you have HIV, Using a condom every time you have vaginal, anal, or oral sex, Not sharing razors or toothbrushes, Not sharing drug needles or syringes.

Can I lower my chances of getting HIV even after being exposed to the virus? — In some cases, yes. There are treatments that can reduce your risk of getting HIV (called “preventive medicines”), but you must start them within 3 days of being exposed to the virus. If you think you have been exposed to HIV, see your doctor or nurse right away. But keep in mind that medicines to prevent HIV after exposure are not for people who risk getting exposed over and over again. In other words, if you commonly have unprotected sex or use dirty needles, these treatments are not for you. Preventive medicines will not work in someone who always has risky behaviors. On the other hand, if an unusual event happened, like a condom broke, or you had unprotected sex, or you were raped, the medicines might help you.

How likely is it that I will catch HIV? — That depends on a lot of factors, such as: Whether you have any sores or cuts on the part of your body that was exposed — People who have open wounds or sores are more likely to get infected. For example, if you have herpes sores on your genitals, your risk of catching HIV goes up.

opportunistic infections - Infection with HIV reduces the immune system's ability to fight infections. **Certain bacteria, viruses, fungi, and other organisms, which do not usually cause infections in healthy people, can cause infections in people with a weakened immune system;** these are called opportunistic infections. One way to measure the strength of the immune system of a patient with HIV is to measure the T cell count (also called the CD4 count). When the T cell count is below **200 cells**, the patient has developed AIDS and is at risk for opportunistic infections. However, opportunistic infections can be prevented by taking certain antibiotics and antifungal medications. HIV medications can also boost the T cell count up so the risk of opportunistic infections can decline with ongoing treatment. to mention some of them:-

PNEUMOCYSTIS, TOXOPLASMA, MYCOBACTERIUM AVIUM COMPLEX (MAC), HISTOPLASMA, CANDIDA, (YEAST), CRYPTOCOCCUS, COCCIDIIOIDES, CYTOMEGALOVIRUS, CRYPTOSPORIDIUM.

Staging of HIV based on CD4 level –

stage 1- (>500), stage 2 (200 – 499), stage 3 – (50 – 199), stage 4 - (<50)

Why is VCT Important for HIV Prevention?

VCT provides the opportunity for people to know their HIV status with quality counseling support to help them cope with a positive or a negative test result.

The majority of adult populations are HIV negative, even in high HIV prevalence settings. Knowing one is HIV negative can serve as a strong motivating factor to remain negative, particularly for those who may otherwise assume it is too late to adopt safer sexual practices.

For people who test positive, while VCT services can link them to options for treatment if and where they exist, and to care and support, just as important, it allows for adoption of preventive measures.

For some, self-protection is a stronger motivator for safer sex than the need to protect others; for others, the responsibility to avoid spreading the virus is itself the critical motivator. Both contribute to HIV prevention.

By knowing one's positive status, HIV positive individuals may become more motivated to adopt a more healthy lifestyle that improves their health status and slows the progression from HIV infection to symptomatic HIV disease and full blown AIDS – for example, avoiding further risks of infection with other viral strains and STIs, seeking early treatment for opportunistic and HIV/AIDS related infections, eating healthy food, avoiding tobacco and reducing stress.

Knowing one is HIV positive also provides an opportunity to protect sexual partners and to plan for the future from an informed position - deciding on marriage and on child bearing, and preparing children and family for the progression of disease and death.

Sexually Transmitted Diseases

The term denote disorders spread principally by intimate contact :- Sexual intercourse ,Close body contact, kissing, cunnilingus, and anal intercourse, Trans placental spread , Passage through the birth canal, and Lactation during the neonatal period

WHO recommends that the term STD be replaced by the term STI. STI has been adopted since 1999 as it better incorporates asymptomatic infections. The most common infectious diseases in the most parts of the world.

Five key points about all STDs today:

1. STDs affect men and women of all backgrounds and economic levels:

They are most prevalent among teenagers and young adults. Nearly two-thirds of all STDs occur in people younger than 25 years of age.

2. The incidence of STDs is rising

Young people have become sexually active earlier yet are marrying later. Divorce is more common. The net result is that sexually active people today are more likely to have multiple sex partners during their lives and are potentially at risk for developing STDs.

- 3 Most of the time, STDs cause no symptoms, particularly in women.

When and if symptoms develop, they may be confused with those of other diseases not transmitted through sexual contact. Even when an STD causes no symptoms, however, a person who is infected may be able to pass the disease on to a sex partner. recommend periodic testing or screening for people who have more than one sex partner.

- 4, STDs tend to be more severe and more frequent for women than for men,

because the frequency of asymptomatic infection - many women do not seek care until serious problems have developed. Some STDs can spread to cause PID, which in turn causes infertility & ectopic (tubal) pregnancy. may be associated with cervical cancer; HPV , causes genital warts other genital cancers.

5. STDs can be passed from a mother to her baby before, during, or immediately after birth;

When diagnosed and treated early, many STDs can be treated effectively. Some infections have become resistant to the drugs used to treat them and now require newer types of antibiotics.

Organisms transmitted sexually

Bacteria - N. gonorrhea, C. trachomatis, T. pallidum, H. ducreyi, C. granulomatis,

Viral – HIV, HSV, HBV, HPV, Molluscum contagiosum virus.

Sexually transmissible - Gonococci and Chlamydia infections, Syphilis, Genital herpes, Papilloma virus infection, LGV, Chancroid and GI

Approaches to STD Dx & Rx

Syndromic Approach, identifying & treating the Syndrome

Major STD Clinical Syndromes

Urethral discharge, Abnormal vaginal discharge, Genital ulcer, Lower abdominal pain, Bubo inguinale, Scrotal swelling, Neonatal conjunctivitis.

Syndromic Management

Based On - Recognition of relatively consistent and characteristic combinations of easily elicited Sx and easily recognized Sn (Syndromes) with which STD commonly presents. Knowledge of the most common etiologies of different syndromes, Knowledge of antimicrobial susceptibility pattern, Knowledge of behavioral & demographic characteristics of people with STD.

Components

Identification and Rx of the Syndrome

Education and counseling on

- Rx compliance
- Risk reduction including condom use
- Partner notification
- Provision of condoms
- VCT for HIV

TUBERCULOSIS — Tuberculosis (TB) is a disease caused by the bacteria *Mycobacterium tuberculosis*. It most commonly affects the lungs, although it can affect other parts of the body. Medications are available to treat TB, although the medications must be taken every day for at least six months. Worldwide, tuberculosis remains a leading cause of death.

TB can be fatal if not recognized and treated. However, tuberculosis is preventable. Identifying and treating those who are infected, but who have not yet developed active tuberculosis, can prevent the spread of TB in the community.

TRANSMISSION — Person-to-person transmission of TB occurs via inhalation of droplet nuclei (airborne particles 1 to 5 microns in diameter). Coughing and singing facilitate formation of droplet nuclei. Persons with active untreated respiratory tract disease (pulmonary or laryngeal) are contagious, particularly when cavitary disease is present or when the sputum is AFB smear positive. However, patients with sputum smear-negative, culture-positive pulmonary TB can transmit infection.

Latent TB — During this latent stage of tuberculosis, the person is well and cannot spread the infection to others. If the person is treated at this stage, active TB can usually be prevented. Treatment is recommended for individuals who are at increased risk for the development of tuberculosis.

Active TB — Active tuberculosis may develop if latent infection is not fully treated. This is called reactivation tuberculosis, and it occurs in 5 to 10 percent of people with latent infection. Reactivation tuberculosis may occur if the individual's immune system becomes weakened and is no longer able to contain the dormant bacteria. The bacteria then become active and make the person sick with TB.

The **greatest risk for developing reactivation TB** is within the first two years following the initial infection. Reactivation can also occur in people with HIV, diabetes mellitus, or those who take medications that weaken the immune system, such as steroids or cancer chemotherapy. Reactivation may also occur for other, unknown reasons.

Skin testing — The TB skin test (also called the purified protein derivative or **PPD**) is the most commonly used test for diagnosing TB. In a person who is newly infected, the skin test usually becomes positive within **4 to 10 weeks** after exposure to a person with TB. TB skin tests are performed by injecting a small amount of a solution just beneath the surface of the skin, usually on the forearm. The solution **contains an inactivated portion of the TB bacteria**. Most individuals previously infected with TB develop a skin reaction **(a red or swollen bump)** at this site.

Interpreting the results — The skin test should be examined 48 to 72 hours after the solution is injected under the skin. The skin is examined to determine if there is swelling (the size of the bump). The area may also be reddened, but redness should not be measured. A trained healthcare provider (not the patient or a family member) interprets the test as positive or negative based on the size of the bump. Anyone who has a bump larger than **15 mm** is considered to have a positive test, and some people with a bump that is **5 or 10 mm** are considered to have a positive test.

What does a positive TB skin test mean? — The TB skin test indicates that tuberculosis bacteria are in the body. It cannot determine if a person has active or latent TB. Further testing is needed to determine if the person has active or latent TB. People who have active TB usually have symptoms, such as a cough (usually persisting for several weeks), fevers, night sweats, and/or unexplained weight loss. In the United States, a positive reaction to a TB skin test is interpreted as positive, regardless of prior BCG vaccination.

Further testing — if the TB test is read as positive, a healthcare provider will ask some specific questions, perform a physical examination, and obtain a chest x-ray to determine if person has active TB, either currently or in the past.

ACTIVE TUBERCULOSIS — Active tuberculosis occurs when the TB bacteria become active and cause a person to become ill. This usually occurs in the lung, although TB can affect any part of the body, including the lymph nodes, brain, kidneys, or bones. If there is evidence on a chest x-ray or other signs that active tuberculosis is present, sputum cultures will be performed to

culture (grow) the bacteria in the laboratory. This usually involves coughing up a "deep" specimen of **phlegm (expectorated sputum)** from the chest. The phlegm is then sent to a laboratory and cultured to determine if TB bacteria are present. Other tests, such as a **bronchoscopy or biopsy**, may also be needed.

While waiting for the results of the sputum culture (it may take as long as two months for the bacteria to grow in the laboratory), treatment with several (usually four) TB drugs is usually recommended. It is important to use more than one medicine and to take the medicines exactly as prescribed to reduce the risk of the bacteria becoming resistant to one (or more) of the medicines. Infection caused by a strain of tuberculosis that has become resistant to standard TB drugs is more difficult to treat, and may require four to six medications.

TUBERCULOSIS AND PUBLIC HEALTH — Tuberculosis is a disease that can easily be spread by anyone with active disease. **Directly observed therapy (DOT)** is a program used by public health departments to ensure that a patient takes his or her medication exactly as prescribed. With this program, a health worker watches a person swallow the TB medication every day. DOT may help to improve cure rates.

Public health programs for tuberculosis are essential for two reasons:

To reduce the number of new cases of tuberculosis (by identifying and treating people with LTBI)

To limit spread of the disease in the community (by monitoring and assuring safe, complete treatment of people with active TB).

Treatment

The treatment of tuberculosis consists of a combination of drugs that are considered to be first-line therapy, including isoniazid, rifampin (rifapentine and rifabutin under specific situations), pyrazinamide, and ethambutol. Second-line antituberculous therapy drugs are reserved for the treatment of tuberculosis in special situations in which there is drug intolerance or resistance to first-line therapy (multidrug-resistant tuberculosis (MDR-TB) or extensively drug-resistant tuberculosis (XDR-TB)).

MALARIA

Malaria is a **protozoan disease** transmitted by the bite of infected Anopheles mosquitoes. Malaria is one of the leading public health problems in Ethiopia. **75%** of the country is malarious (<2000m), with about 68% of the population (□ 50 million) at risk. Major impediment to **socio-economic development**, coincides with major planting and harvesting season. Five species of the genus plasmodium cause nearly all malarial infections in humans.

P. falciparum (□ 60%) P. vivax (□ 40%)

P. malariae (rare)

P. ovale

P. knowlesi..SAA

Some malaria parasites of other primates (P. cynomolgi, and P. simium) can also infect humans under natural conditions. Almost all deaths are by Pf. The **disease in human beings is caused by the direct effects of RBC invasion and destruction by the asexual parasite and the hosts reaction.** **Malaria** in Ethiopia is unstable: Unstable malaria- Seasonal, Lack of immunity, Epidemic common, All age groups affected.

The incubation period for P. falciparum infection is about 12 to 14 days. Longer incubation periods are more likely in semi-immune individuals and individuals taking ineffective malaria prophylaxis. The incubation period for **P. vivax and P. ovale is also about two weeks; most relapses due to these species occur within three months.** The incubation period for P. malariae is about 18 days; however, low grade asymptomatic infections can persist for years. **P. falciparum and malariae have no dormant (hypnozoite) phase, hence do not relapse.**

CLINICAL MANIFESTATIONS

Malaria is a very common cause of fever in tropical countries.

Non-specific symptoms

Common clinical pictures:

Malaise, headache, vomiting, Fever, Cough, diarrhea, Jaundice

Tender hepatosplenomegaly, Anemia develops rapidly.

Laboratory evaluation may demonstrate: parasitemia (usually <5000 parasites/microL of blood, <0.1 percent parasitized RBCs), anemia, thrombocytopenia, elevated transaminases, mild coagulopathy, and elevated BUN and creatinine.

Complicated malaria — Patients with complicated or severe malaria may have hyperparasitemia [$\geq 100,000$ parasites/microL of blood (≥ 5 to 10 percent of parasitized RBCs)]. The WHO uses cutoffs of 5 percent (in low transmission areas) and 10 percent (in high transmission areas) to define hyperparasitemia for diagnosis of severe disease diagnosis. Many of the clinical findings are the result of the parasitized (and non-parasitized) RBCs adhering to small blood vessels ("cytoadherence") causing small infarcts, capillary leakage, and organ dysfunction.

Altered consciousness with or without seizures, Respiratory distress or acute respiratory distress syndrome (ARDS), Circulatory collapse, Metabolic acidosis, Renal failure, hemoglobinuria ("blackwater fever"), Hepatic failure, Coagulopathy with or without disseminated intravascular coagulation, Severe anemia or massive intravascular hemolysis and Hypoglycemia

PREDISPOSING FACTORS FOR COMPLICATIONS

Extremes of age., Pregnancy, especially in primigravidae and in 2nd half of pregnancy.

Immunosuppressed - patients on steroids, anti-cancer drugs, immunosuppressant drugs.

Immunocompromised - patients with advanced tuberculosis, HIV and cancers.

Splenectomy, Lack of previous exposure to malaria (non-immune) or lapsed immunity

Pre-existing organ failure.

DIAGNOSIS

Epidemiology and clinical pictures,

Microscopic (Thin and Thick Blood films):

The diagnosis of malaria rests on the demonstration of parasite in stained peripheral-blood smears. Serology (rapid diagnostic test)-RDT.

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Light microscopy - Giemsa stained blood film

Thick and Thin Blood Smears

Thick smears -detect parasite...high sensitivity

Thin smears - for species....low...

TREATMENT - General management,Treat complications,Specific anti malarial treatment

Two classes of drugs - Cinchona alkaloids (quinine and quinidine), Artemisinin derivatives (artesunate, artemether & artemotil).

PREVENTION

Mosquito vector control — Mosquito vector control methods reduce the mosquito population and include use of insecticide treated nets (ITNs), household insecticide indoor residual spraying (IRS), and larval control by environmental management.

Insecticide treated nets — Bed nets are a sensible physical barrier precaution against malaria-transmitting mosquitoes since the major malaria vectors bite during the night (for example, *An. gambiae* and *An. funestus*). Addition of a chemical barrier in the form of pyrethroid treatment to bed nets provides protection, even if the net is torn. Pyrethroids are the major insecticides used routinely for bed net treatment. Newer long-lasting insecticidal nets (LLINs) are washproof pyrethroid impregnated nets; they may be used for about five years, after which they must be replaced because of wear (with holes) and a decreased pyrethroid content. Only LLINs should be deployed in control and elimination programs.

Indoor residual spraying — Indoor residual spraying (IRS) involves spraying insecticide on indoor residential walls and ceilings; depending on the insecticide and surface, the effect can last for extended periods. IRS is performed with hand-operated compression sprayers containing an aqueous suspension of insecticide. Spray teams must be trained and supervised closely in applying the correct dose to walls and ceilings and protecting themselves from toxicity.

Frequency of IRS application varies from once or twice yearly for organochlorine compounds (eg, DDT) to three or more times for organophosphates (eg, malathion). Mosquito contact with

insecticide-treated surfaces is generally lethal; sublethal exposure drives mosquitoes outside the house. Ideally the mosquito is killed or repelled before feeding on humans within the dwelling . DDT (Dichloro-Diphenyl-Trichloroethane) is a widely used IRS insecticide based on its efficacy, low cost, low toxicity, and length of effect. In the mid-1990s, many regions switched from DDT to pyrethroids for IRS. This resulted from environmental concerns about toxicity and pressure against DDT use, and there has been a reduction in production of the compound.

Larval control — Prior to availability of insecticides for use against adult mosquitoes, a concerted effort was directed toward making potential breeding sites unsuitable for *Anopheles* larvae. Although ITNs and IRS have become the most important measures for mosquito vector control by targeting the adult *Anopheles* mosquito, there are conditions in which larval control can still play a useful role, including urban areas, refugee camps and other epidemic-prone areas.

Mosquito repellents — Repellents applied to exposed skin may be used to protect against mosquito bites. Effective repellents include synthetic preparations such as DEET (N,N-diethyl-m-toluamide), Picardin (KBR3023) and IR 3535, as well as PMD (P-MENTHANE-3,8-DIOL), which is derived from lemon eucalyptus . For maximal protection against mosquitoes, DEET is preferable over other agents.

Diabetes mellitus

The term diabetes mellitus describes several diseases of abnormal carbohydrate metabolism that are characterized by hyperglycemia. There are two different types of diabetes mellitus. In type 1 diabetes mellitus, the problem is that the pancreas (an organ in the abdomen) does not make enough insulin. In type 2 diabetes mellitus, the pancreas does not make enough insulin , the body becomes resistant to normal or even high levels of insulin, or both. This causes high blood glucose (blood sugar) levels, which can cause problems if untreated.

TYPE 1 DIABETES — Type 1 diabetes mellitus is a chronic medical condition that occurs when the pancreas, an organ in the abdomen, produces very little or no insulin. Insulin is a hormone that helps the body to absorb and use glucose and other nutrients from food, store fat, and build up protein. Without insulin, blood glucose (sugar) levels become higher than normal.

Type 1 diabetes requires regular blood sugar monitoring and treatment with insulin. Treatment, lifestyle adjustments, and self-care can control blood sugar levels and minimize the risk of

disease-related complications. Type 1 diabetes usually begins in childhood or young adulthood, but can develop at any age.

CAUSES — Type 1 diabetes usually develops when the immune system destroys the insulin-producing cells (called the beta cells) in the pancreas. This is called an autoimmune response. The cause of this abnormal immune response is being studied. This process occurs over many months or years, and there may be no symptoms of diabetes. High blood sugar and its associated symptoms (frequent urination, thirst) do not usually occur until more than 90 percent of the cells that make insulin have been destroyed. Close relatives (children, siblings) of a person with type 1 diabetes have an increased risk of developing type 1 diabetes, compared to a person with no family history (5 to 6 percent versus 0.4 percent, respectively).

DIAGNOSIS — The diagnosis of diabetes is based on your symptoms and blood tests.

Symptoms — Most people with type 1 diabetes have symptoms of high blood sugar levels (hyperglycemia). This includes: Excessive thirst, Feeling tired, Needing to urinate frequently, Losing weight, Blurred vision.

Less commonly, there are symptoms of a problem called diabetic ketoacidosis (DKA). People with DKA have symptoms of high blood sugar, as well as nausea and vomiting, belly pain, breathing rapidly, feeling sluggish, having trouble paying attention, and sometimes coma. DKA is a medical emergency and must be treated promptly.

Type 2 diabetes mellitus is a disorder that disrupts the way your body uses glucose (sugar).

All the cells in your body need sugar to work normally. Sugar gets into the cells with the help of a hormone called insulin. If there is not enough insulin, or if the body stops responding to insulin, sugar builds up in the blood. This is what happens to people with diabetes mellitus.

Type 2 diabetes is a chronic medical condition that requires regular monitoring and treatment throughout your life. Treatment includes lifestyle changes, self-care measures, and sometimes medications. Fortunately, these treatments can keep blood sugar levels close to normal and minimize the risk of developing complications.

CAUSES — Type 2 diabetes is thought to be caused by a combination of genetic and environmental factors.

Genetic causes — Many people with type 2 diabetes have a family member with either type 2 diabetes or other medical problems associated with diabetes, such as high cholesterol levels, high blood pressure, or obesity..

Environmental conditions — Environmental factors such as what you eat and how active you are, combined with genetic causes, affect the risk of developing type 2 diabetes.

Pregnancy — A small number (about 3 to 5 percent) of pregnant women develop diabetes during pregnancy, called "gestational diabetes." Gestational diabetes is similar to type 2 diabetes, but usually resolves after the woman delivers her baby. Women who have gestational diabetes are at increased risk for developing type 2 diabetes later in life.

Diagnostic criteria — The diagnosis of diabetes mellitus is easily established when a patient presents with classic symptoms of hyperglycemia (thirst, polyuria, weight loss, blurry vision) and has a random blood glucose value of 200 mg/dL (11.1 mmol/L) or higher,

A fasting blood sugar level of 126 mg/dL (7.0 mmol/L) or higher(A normal fasting blood sugar level is less than 100 mg/dL (5.55 mmol/L).)AFTER 8 OR 12HR

A blood sugar of 200 mg/dL (11.1 mmol/L) or higher two hours after an oral glucose tolerance test. An A1C of 6.5 percent or higher(A normal fasting blood sugar level is less than 100 mg/dL (5.55 mmol/L).The blood tests must be repeated on another day to confirm the diagnosis of diabetes.

Hypertension — Hypertension is the medical term for high blood pressure. Blood pressure refers to the pressure that blood applies to the inner walls of the arteries. Arteries carry blood from the heart to other organs and parts of the body.

WHAT IS BLOOD PRESSURE? — An individual's blood pressure is defined by two measurements:

Systolic pressure is the pressure in the arteries produced when the heart contracts (at the time of a heart beat). Diastolic pressure refers the pressure in the arteries during relaxation of the

heart between heart beats. Blood pressure is reported as the systolic pressure over diastolic pressure (eg, 120/70 or 120 over 70). Untreated high blood pressure increases the strain on the heart and arteries, eventually causing organ damage. High blood pressure increases the risk of heart failure, heart attack (myocardial infarction), and stroke.

HIGH BLOOD PRESSURE DEFINITION

Normal blood pressure — Less than 120 over less than 80

Prehypertension — 121 to 139 over 81 to 89

People with prehypertension are at increased risk of developing hypertension and cardiovascular complications.

Hypertension

Stage 1: 140 to 159 over 90 to 99

Stage 2: greater than 160 over greater than 100

Most adults with hypertension have essential or primary hypertension, which means that the cause of the high blood pressure is not known. A small subset of adults has secondary hypertension, which means that there is an underlying and potentially correctable cause.

HIGH BLOOD PRESSURE RISK FACTORS — Hypertension is a common health problem.

Hypertension is more common as people grow older.

HIGH BLOOD PRESSURE SYMPTOMS — High blood pressure does not usually cause any symptoms.

HIGH BLOOD PRESSURE DIAGNOSIS — Many people are anxious when seeing a doctor or nurse. As a result, you are not diagnosed with hypertension unless your blood pressure is persistently high at two office visits at least one week apart. The only exceptions to this are if the blood pressure is very high or if you have damage from high blood pressure, such as heart, eye, or kidney injury. Before a decision is made to begin treatment, you may be asked to measure your blood pressure at home or work.

HIGH BLOOD PRESSURE TREATMENT — Untreated hypertension can lead to a variety of complications, including heart disease and stroke. The risk of these complications increases as your blood pressure rises above 110/75, which is still in the healthy range. Treating high blood pressure can reduce your risk of heart attack, stroke, and death.

Lifestyle changes — Treatment of hypertension usually begins with lifestyle changes. Making these lifestyle changes involves little or no risk. Recommended changes often include:

Reduce the amount of salt in your diet , Lose weight if you are overweight or obese

Avoid drinking too much alcohol , Stop smoking , Exercise at least 30 minutes per day most days of the week

Medicine — A medicine to lower blood pressure may be recommended if your blood pressure is consistently at or above 140/90. Treatment with medicine is recommended at a lower blood pressure for people with diabetes, atherosclerosis (fatty deposits lining the arteries, as in coronary heart disease, stroke, or peripheral artery disease) or chronic kidney disease.

FOOD POISONING – is Illness caused by poisonous or contaminated food

CAUSES — There are many ways that food can lead to illness, such as contamination with microbes or chemicals, allergies to foods, and the illnesses associated with overeating food. This article will focus on illness caused by eating food that is contaminated by a microorganism — a bacterium, virus, or parasite.

Microorganisms that cause food poisoning — Some of the most common microorganisms that cause food poisoning include the following:

Salmonella — Salmonella is the leading cause of foodborne illness in the United States. There are many types of Salmonella, including those that cause typhoid fever and those that cause gastroenteritis. In the United States, the type that causes gastroenteritis is more common.

Most people become infected with Salmonella after consuming food that is contaminated with animal feces. Thus, most cases of Salmonella food poisoning are due to either cross-contamination or undercooking of raw meat or poultry products, or contamination of fresh produce.

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Escherichia coli — Escherichia coli (E. coli) is a common cause of food poisoning and traveler's diarrhea. Infection with E. coli can occur when food or water becomes contaminated with bacteria from infected feces.

Hepatitis A virus — Hepatitis A virus is transmitted in foods contaminated by an infected food handler or from raw shellfish. Symptoms do not usually appear until 15 to 50 days after infection, which can make it difficult to determine the source of infection.

Norovirus — Norovirus infection is the most common food-borne illness and is often acquired when infected food handlers contaminate the food they are preparing (eg, in restaurants). Norovirus is very infectious and easily passed from person to person. Symptoms usually start 24 to 48 hours after exposure with nausea, vomiting, diarrhea and abdominal pain. Most cases resolve without medical treatment.

Listeria monocytogenes — Listeria is a bacteria that can be found in unpasteurized or contaminated milk, soft cheese, and other dairy products, or in contaminated processed/delicatessen meats, hot dogs, and smoked seafood. Gastrointestinal symptoms usually develop within 24 hours, and include fever, watery diarrhea, nausea, vomiting, headache, and pains in joints and muscles. A more serious infection, known as listeriosis, may occur 1 to 3 weeks later if the listeria bacteria invades the bloodstream.

Other microorganisms — More than 200 different microbes are known to cause food poisoning. Detailed information about some of these microbes is available separately. (See "Differential diagnosis of microbial foodborne disease".)

FOOD POISONING RISK FACTORS — There are several factors that can increase your risk of developing food poisoning. Ask a healthcare provider if you are in a group that needs to take extra precautions to avoid food-borne illness.

A weakened immune system.

Improper food storage or handling;

FOOD POISONING SYMPTOMS — The symptoms of food poisoning depend upon which microbe you eat. Symptoms can appear minutes after the food is ingested, or may not appear until days or weeks later. The most common symptoms include:

Nausea , Vomiting , Abdominal pain, Diarrhea, which may be watery or bloody, Fever

Less commonly, neurologic symptoms develop, such as blurry vision, dizziness, or tingling in the arms.

FOOD POISONING DIAGNOSIS — Food poisoning is usually diagnosed based on a person's history and symptoms. However, it is not always possible or necessary to determine the particular food or microorganism that caused the illness, especially if the illness is mild and begins to improve within a few days.

FOOD POISONING TREATMENT — In most cases of food poisoning, treatment is primarily supportive. Supportive treatment includes drinking adequate fluids, eating small, low-fat meals, and resting as needed. Antibiotics are recommended for some, but not all types of food poisoning. In most cases, symptoms resolve quickly and no special treatment is necessary. In people with persistent diarrhea and/or vomiting, intravenous fluids may be needed to prevent dehydration. Antidiarrheal medications can prolong these illnesses and are not generally recommended.

FOOD POISONING PREVENTION — Although it is not always possible to avoid becoming ill as a result of food poisoning, certain precautions can decrease the chances that it will occur.

Food safety recommendations — The following general precautionary measures are recommended : Do not drink raw (unpasteurized) milk or foods that contain unpasteurized milk. Wash raw fruits and vegetables thoroughly before eating. Keep the refrigerator temperature at 40°F (4.4°C) or lower; the freezer at 0°F (-17.8°C) or lower. Use precooked, perishable, or ready-to-eat food as soon as possible. Keep raw meat, fish, and poultry separate from other food. Wash hands, knives, and cutting boards after handling uncooked food, including produce and raw meat, fish, or poultry. Thoroughly cook raw food from animal sources to a safe internal temperature: Never leave cooked foods at room temperature for more than two hours (one hour if the room temperature is above 90°F/32°C).

Alcoholism

Alcohol intoxication — Alcohol intoxication occurs when drinking excess alcohol leads to inappropriate behavior and impaired judgment. Being intoxicated can cause slurred speech, loss of coordination, unsteady walking or running, difficulty paying attention or remembering, confusion, or coma.

Alcohol dependence — Alcohol dependence, also known as alcohol addiction or alcoholism, is the most severe type of drinking problem. People with alcohol dependence lose control over their drinking, become preoccupied with alcohol, and are often in denial about their problem.

Alcohol abuse — People with alcohol abuse have a destructive pattern of alcohol use that leads them to do one or more of the following :

- Fail to meet work, school, or social obligations

- Repeatedly use alcohol even when it might be dangerous to do so, such as while driving

- Develop legal problems related to substance use

- Continue to drink even though alcohol use creates social or interpersonal problems

What is one drink? — A standard "drink" in the United States contains about 0.6 fluid ounces or 14 grams of "pure" alcohol, and is the equivalent of: 12 ounces of regular beer, 8-9 ounces of malt liquor, 5 ounces of wine, 1.5 ounces of 80 proof distilled spirits

Binge drinkers — People who binge drink also have a significant risk of developing an alcohol problem. Binge drinking is defined as drinking at a single occasion (generally within about two hours): Women: Four or more drinks , Men: Five or more drinks

SCREENING AND DIAGNOSIS OF DRINKING PROBLEMS — When trying to determine whether a person has a problem with alcohol, healthcare providers focus on three key things:

CAGE

is sensitive 75-85 % for detecting consumption of 4 drinks per day or more.its sensitivity may be increased by using it before the alcohol history is taken

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C- Have you ever felt you ought to CUT DOWN on your drinking ?

A- Have people ANNOYED you by criticizing your thinking ?

G- Have you ever felt bad or GUILTY about your drinking ?

E- Have ever had a drink first thing in the morning to steady your nerves or get rid of a hangover (EYE-OPENER) ?

Males - 2 “Yes” response suggests a problem.

Females - 1 “yes” response suggests a problem

CONSEQUENCES OF DRINKING PROBLEMS — There are a number of serious consequences of drinking alcohol excessively: Excessive alcohol consumption is a leading preventable cause of death in the United States. Drinking alcohol increases the risk of traffic accidents, suicide, drowning, and other serious injuries. Alcohol use continues to be the leading cause of injuries treated in trauma centers and emergency departments .Alcohol-related liver disease may lead to end-stage liver disease (cirrhosis) and death. Alcohol increases the risk of certain cancers of the mouth, esophagus, throat, liver, and breast.

TREATMENT OF DRINKING PROBLEMS —

1. Psychoeducation
2. Pharmacological Rx
3. Counseling
4. Family Therapy

marijuana — Marijuana is a drug that comes from the leaves and flowers of a plant. (The plant is also called marijuana.) In the US, marijuana is usually sold in the form of leaves and buds. In Europe, a different form of marijuana is more common. It is called “hashish” and is made from a sticky substance that comes from the plant.

What does marijuana do to the brain and body? — Marijuana can make you feel happy and relaxed. It can also make you feel less anxious, tense, and depressed. But it does bad things, too. It makes it hard to focus or remember things, or to think clearly. Plus, it slows your reaction time and impairs your judgement.

Who uses marijuana? —Younger people are more likely than older people to use it, and men are more likely than women to use it.

Does marijuana have any medical benefits? — Maybe. Marijuana might help ease pain and other symptoms caused by cancer or cancer treatment. It might also help with the symptoms of multiple sclerosis. Some medicines are made from the same active ingredients that are in marijuana.

How can you tell if someone has a problem with marijuana use? — People who have a problem with marijuana use have 1 or more of these issues: They often don't do things that are expected of them, such as go to work or school, remember family events, and clean their home. They have problems in their relationships with other people. They sometimes have legal problems.

How can you tell if someone is addicted to marijuana? — People who are addicted to marijuana can have the same issues listed above for problem users. They also have 3 or more of these problems: They need to use more and more to get the same effects they used to get with less use. Or they get less effect from using the amount that used to get them high. This is called "tolerance." They end up using more marijuana than they planned to, or they use it for longer than they planned to. They wish they could cut down on marijuana, but they can't. They spend a lot of time trying to get marijuana, getting high, or recovering from being high. They keep using marijuana even if it causes them health problems or other problems in their life. They have "withdrawal symptoms" if they stop using marijuana after using it for a long time. Withdrawal symptoms can include: Yawning, feeling tired, or sleeping too much, Slowed thoughts and movements , Feeling irritable, tense, or anxious , Feeling sad or depressed.

How is marijuana addiction treated?

Talk therapy Cognitive behavioral therapy, or "CBT"

Motivational interviewing Family therapy

Smoking

Tobacco smoking often starts during adolescence but can have important health effects throughout life

FACTORS CONTRIBUTING TO SMOKING INITIATION

Attitudes and beliefs —Attitudes toward smoking are influenced by several factors:

Peer and family influence , Age , Misperceptions, Marketing.

Nicotine dependence — Nicotine is a strongly addictive substance, and many individuals develop nicotine dependence after days to weeks of exposure. These include:Craving for cigarettes, Dysphoria or depressed mood, Sleep disturbances, Irritability and anger, Anxiety, Difficulty concentrating, Restlessness, Increased appetite.

BENEFITS OF QUITTING SMOKING — Smoking cessation has major and immediate health benefits for men and women of all ages. The earlier you quit, the greater the benefits.

Cardiovascular disease — Cigarette smoking doubles the risk of developing coronary heart disease, and smoking cessation can rapidly reduce this risk.In some studies, the risk of heart attack was reduced to the rate of nonsmokers within two years of quitting smoking.

Pulmonary disease — Smoking increases the risk of long-term lung diseases such as chronic obstructive pulmonary disease. Asthma and sudden infant death syndrome (SIDS) are more common among children exposed to smoke. Cigarette smoking makes it more difficult to treat asthma.

Cancer — Cigarette smoking is responsible for almost 90 percent of cases of lung cancer. Smoking cessation reduces the risk of lung cancer within five years of stopping, although former smokers still have a higher risk of lung cancer than people who have never smoked. Stopping smoking may also reduce the risk of other cancers, such as cancers of the head and neck, esophagus, pancreas, and bladder.

Peptic ulcer disease — Cigarette smoking increases the risk of developing peptic ulcer disease.

Osteoporosis — Smoking increases bone loss and increases the risk of hip fracture in women..

Stages of change —smokers can be classified into one of four stages of smoking cessation:

Precontemplation (not intending to quit in the foreseeable future)

Contemplation (intending to quit in the foreseeable future)

Preparation (intending to quit in the immediate future)

Recent Action (cessation of smoking)

Using this model, an individual's stage of change is identified, and then counseling focuses on processes most likely to move him or her forward toward quitting.

Typhoid fever is characterized by severe systemic illness with fever and abdominal pain . The organism classically responsible for the enteric fever syndrome is *S. enterica* serotype Typhi (formerly *S. typhi*). Many of the 2000 serotypes of *Salmonella* serotypes can cause a similar syndrome, including but not limited to:

Salmonella paratyphi A *Salmonella paratyphi* B

Salmonella paratyphi C *Salmonella choleraesuis*

It is usually not clinically useful or possible to reliably predict the causative organism based on clinical findings . The term “enteric fever” is a collective term that refers to both typhoid and paratyphoid fever.

EPIDEMIOLOGY — Typhoid fever is more common in children and young adults than in older patients . Because humans are the only reservoir for *S. enterica* serotype Typhi, a history of travel to settings in which sanitation is poor or with a known typhoid case or carrier is useful, although a specific contact is identified in a minority of cases.

MICROBIOLOGY — The organism classically responsible for the enteric fever syndrome is *S. enterica* serotype Typhi (formerly *S. typhi*). Other *Salmonellae* may cause a similar clinical syndrome as noted above .

CLINICAL MANIFESTATIONS — Typhoid is a febrile illness with onset of symptoms 5 to 21 days after ingestion of the causative microorganism in contaminated food or water. The incubation period and inoculum needed to cause disease vary depending upon host factors such as age, gastric acidity, and immunologic status.

Typhoid fever usually presents with abdominal pain, fever, and chills; the differential diagnosis is broad and includes malaria, amebiasis, dengue fever, leishmaniasis, and other causes of

bacterial gastroenteritis. Outside of endemic areas, the diagnosis should be considered in travelers or visitors from endemic areas. In the absence of acute complications or death from overwhelming sepsis, symptoms gradually resolve over weeks to months.

Focal extraintestinal manifestations including involvement of the hepatobiliary, cardiovascular, respiratory, genitourinary, musculoskeletal, and central nervous systems have been described as a result of bacteremic seeding, but are observed infrequently . “Enteric encephalopathy” is altered consciousness, delirium, and confusion in association with enteric fever.

Chronic carriage — Chronic Salmonella carriage is defined as excretion of the organism in stool or urine >12 months after acute infection. Rates of chronic carriage after *S. typhi* infection range from 1 to 6 percent . In general, chronic carriers do not develop recurrent symptomatic disease. They appear to reach an immunologic equilibrium in which they are chronically colonized and may excrete large numbers of organisms, but have a high level of immunity and do not develop clinical disease .

DIAGNOSIS

Culture — The diagnosis of typhoid fever is made by culture of the causative microorganism in the setting of a compatible clinical illness.

Serology — Widal test. The Widal test detects anti-*S. serotype Typhi* antibodies,

Treatment- ANTIBIOTIC THERAPY — Treatment of typhoid fever has been complicated by the development and rapid dissemination of typhoidal organisms resistant to ampicillin, trimethoprim-sulfamethoxazole, and chloramphenicol. In recent years, development of creeping resistance to fluoroquinolones has resulted in more challenges.

Cholera is a diarrheal illness caused by infection with the gram-negative bacterium *Vibrio cholerae*. Cholera is characterized by severe, watery diarrhea, which can rapidly lead to dehydration and death in untreated patients.

MICROBIOLOGY — *Vibrio cholerae* is divided into more than 200 serotypes, determined by the O antigen of the cell surface lipopolysaccharide. Only *V. cholerae* of the O1 and O139

serotypes are responsible for epidemic cholera in humans. The major virulence factor for *V. cholerae* O1 and O139 is cholera toxin, a multimeric protein composed of one A subunit and five B subunits. Toxin binding to enterocytes leads to an elevation in cyclic AMP within the intestinal mucosa, causing an increase in chloride secretion and a reduction in sodium absorption. This leads to massive loss of fluid and electrolytes, and produces the signs and symptoms of cholera gravis, or severe disease

CLINICAL MANIFESTATIONS —Diarrhea in the setting of cholera may begin suddenly or gradually. Stools rapidly become watery with flecks of mucus, leading to their description as "rice water" stools, since they have the appearance of water in which rice has been washed. The stools often have a mild "fishy" odor. Vomiting, frequently watery, is common, and may begin either before or after the onset of diarrhea. Patients may have abdominal cramping but do not have the frank abdominal pain classically associated with dysentery; fever is infrequent. Although cholera is considered a prototypical non-invasive infection, there is increasing evidence for a role of inflammation in the host response.

Complications of severe cholera are due to the massive volume and electrolyte losses. Cholera stools contain high concentrations of sodium, potassium, chloride, and bicarbonate.

Hypoglycemia is a poor prognostic sign in cholera, especially in children. It may contribute to the mental status changes and seizures that can be seen with severe disease.

DIAGNOSIS — Cholera should be considered in all cases of severe watery diarrhea and vomiting, especially those with rapid, severe dehydration

Clinical diagnostic tools include Gram stain/culture (augmented with methods for detection of toxinogenic strains) and dark field microscopy:

TREATMENT — The mainstay of treatment for cholera is correction of hypovolemic dehydration. The degree of dehydration determines the route, rate, and type of fluid used for volume replacement.

Rehydrationn

Oral rehydration — Appropriate use of oral rehydration solutions (ORS) can reduce mortality from cholera from over 50 percent to less than 1 percent .

Intravenous volume repletion — Patients who have lost more than 10 percent of body weight from dehydration or who are unable to drink because of vomiting or mental status changes should be managed with intravenous volume repletion.

Antimicrobial therapy - Antibiotics have two beneficial effects in the setting of cholera: they reduce the duration of diarrhea by about 50 percent and the duration of *Vibrio* excretion to about one day . Tetracyclines ,Single dose doxycycline

Nutrition — Sufficient feeding during and after the diarrheal illness should be encouraged, to prevent development of malnutrition and chronic enteropathy.

PREVENTION — *V. cholerae* infection is spread by contaminated food and water. Therefore, prevention depends upon the interruption of fecal-oral transmission

Oral Rehydration Solution (ORS): Effective in all types diarrhea.Can prevent dehydration if given early in the disease.Cheap, easy to administer; can be given by mother at home.No chance of overhydration or electrolyte overdose.**ORS Composition** -Sodium Chloride,Tri-Sodium Citrate (bicarbonate),Potassium Chloride, Glucose.Methods of administration: spoon, cup, dropper, syringe, naso-gastric tube.

ORAL HEALTH CARE

Oral Hygiene

Good oral hygiene results in a mouth that looks and smells healthy.

How to keep good oral hygiene

□ Brushing thoroughly after each meal or at least twice a day (2 – 3times),A correct brushing must have duration of 2 to 3 minutes. Use vertical motion, from gum to teeth tip to brush. Use medium type tooth brush, Lightly brushing your tongue also helps to remove plaque and food debris and makes your mouth feel fresh.

A worn toothbrush (top) can damage gum tissue. Replace your toothbrush every three months or when it becomes worn. It is also very important to change toothbrushes after you've had a cold, since the bristles can collect germs that can lead to re-infection.

☐ Flossing daily to clean between your teeth. Toothbrush can't reach difficult areas of the teeth as the inter-dental spaces. Using dental floss at least once a day provides effective removal of dental plaque and cleaning between the teeth.

Regular dental flossing can reduce cavities, gum disease and bad breath.

☐ Eating a balanced diet and limiting snacks between meals

☐ Using dental products that contain fluoride, including toothpastes

☐ Making sure those children less than 12 drink fluoridated water or take a fluoride supplement if they live in a non-fluoridated area and take calcium rich foods and drinks, such as milk.

There are harmful and helpful diets to oral health. Milk and cheese are rich in calcium and phosphate, and may also encourage remineralisation. All foods increase saliva production, Foods high in fiber may also help to increase the flow of saliva and a bolus of fiber like celery string can force saliva into trapped food inside pits and fissures on chewing surfaces where over 80% of cavities occur, to dilute carbohydrate like sugar, neutralize acid and remineralise tooth like on easy to reach surfaces. Sugar-free chewing gum stimulates saliva production, and helps to clean the surface of the teeth

A poor diet can lead to gum disease and tooth decay. Foods high in carbohydrates, sugars and starches greatly contribute to the production of plaque acids that attack tooth enamel. Eventually, these acids can cause tooth enamel to break down, forming a cavity.

If you must eat foods high in sugar or starch, try to eat them during meals rather than between meals, and avoid any foods that stick to your teeth as these can produce more plaque. Most meals already contain acid-producing ingredients, so the less you expose your teeth to these ingredients, the less plaque acids attack your tooth enamel. Also, saliva production rises during

meals, helping rinse food from the mouth. Decrease frequency of taking sweet and sticky foods. Brush your teeth or Rinse your mouth after each meal.

Nutrition

Nutrition is the science of Food, the nutrients and other substances , their action , interaction and balance in relation to health and disease , and the process by which the organism ingests , digests , absorbs, transports, utilizes and excretes food substances. In addition, nutrition must be concerned with social, cultural and physiological implications of food and eating Nutrition deals with the nutrients , their characteristics , functions, body's quantitative need for them

Food: is defined as anything edible based on specific culture, religion, etc.

Nutrient : an active ingredient in the food that play specific structural or functional role in the body's lively activity.

Diet: is the sequence of meals in a day. It is concerned about the eating styles of individuals or a group.

Macronutrients : are nutrients that are required by our body in larger quantities on a daily basis and need to be transformed in to smaller units by the body in-order to give essential function in the body processes . These include carbohydrates, lipids and proteins.

Micronutrients: are nutrients that are required in smaller quantities by the body and perform essential physiological and structural functions . These include vitamins and minerals.

Nutritional Assessment : Is an interpretation of the anthropometric , clinical , biomedical and dietary survey data in order to determine whether a person is well nourished or (over or under nourished)

Common Nutritional Problems of Public Health Importance in Ethiopia

Ethiopia, as many other developing countries is affected by several nutritional deficiencies.

Nutritional problems of public importance in Ethiopia include:

1. Macronutrients deficiencies- Protein energy malnutrition

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2. Micronutrients deficiencies: Iron deficiency anemia (IDA), Iodine deficiency disorders (IDD), Vitamin A deficiency (VAD), Vitamin D deficiency (Rickets), Fluorine deficiency (or excess)

Millennium Development Goals (MDGs) (based on Goals at UN Millennium Summit, Sept 8, 2000)

- | | |
|---|---|
| 1. Eradicate extreme poverty and hunger | 2. Achieve universal primary education |
| 3. Promote gender equality | 4. Reduce child mortality |
| 5. Improve maternal survival | 6. Combat HIV/AIDS, malaria & other diseases |
| 7. Ensure environmental sustainability | 8. Develop a Global Partnership for Development |

Effects of Underweight in Under Fives

Excess infection, Excess mortality, Decreased activity, Delayed development, Poor school performance

Functions of Vitamin A

Regulates cellular differentiation: Embryonic, Epithelial (eg, conjunctival, tracts), Immune stem cells, Hematopoietic, Osteoid (osteoblasts, -clasts). Participates in rod cell visual

VITAMIN A DEFICIENCY DISORDERS

Health Consequences of VAD

Xerophthalmia: Mild to severe, Corneal blindness and disability, Anemia, Stunted growth, Impaired immunity, Increased severity of infection (eg, measles, diarrhea, or malaria), Mortality

HEALTHY DIET — The food choices we make can have an important impact on our health. However, expert opinions continue to change about which and how much of these foods is optimal.

GENERAL RECOMMENDATIONS FOR A HEALTHY DIET —

Eat lots of vegetables, fruits, and whole grains and a limited amount of red meat. Get at least five servings of fruits and vegetables every day. Tips for achieving this goal include:

Make fruits and vegetables part of every meal. Eat a variety of fruits and vegetables. Frozen or canned can be used when fresh isn't convenient.

Eat vegetables as snacks.

Have a bowl of fruit out all the time for kids to take snacks from.

Put fruit on your cereal.

Consume at least half of all grains as whole grains (like whole wheat bread, brown rice, whole grain cereal), replacing refined grains (like white bread, white rice, refined or sweetened cereals).

Cut down on unhealthy fats (trans fats and saturated fats) and consume healthy fats (polyunsaturated and monounsaturated fat). Tips for achieving this goal include:

Choose chicken, fish, and beans instead of red meat and cheese. Cook with oils that contain polyunsaturated and monounsaturated fats, like olive and peanut oil. Choose margarines that do not have partially hydrogenated oils. Soft margarines (especially squeeze margarines) have less trans fatty acids than stick margarines. Eat fewer baked goods that are store-made and contain partially hydrogenated fats (like many types of crackers, cookies, and cupcakes). When eating at fast food restaurants, choose healthy items for yourself as well as your family, like broiled chicken or salad.

Avoid sugar-sweetened beverages and excessive alcohol intake. Tips for achieving this goal include: Choose non-sweetened and non-alcoholic beverages, like water, at meals and parties. Avoid occasions centered around alcohol. Avoid making sugar-sweetened beverages and alcohol an essential part of family gatherings. Keep calorie intake balanced with needs and activity level

Obesity - it is a chronic disease that is increasing in prevalence in adults, adolescents, and children, is now considered to be a global epidemic. In most populations, the prevalence of overweight and obesity has increased over the past 20 years.

Rationale for screening — Obesity is associated with a significant increase in mortality and risk of many disorders, including diabetes mellitus, hypertension, dyslipidemia, heart disease, stroke, sleep apnea, cancer, and many others. Conversely, weight loss is associated with a reduction in obesity-associated morbidity.

SCREENING — Screening for overweight and obesity should include measurement of body mass index (BMI), waist circumference, and evaluation of overall medical risk. Subsequent intervention, if necessary, is then based upon overall risk assessment. Measuring body mass index (BMI) is the first step to determine the degree of adiposity.

Calculating BMI — The distinction between overweight and obesity is made on the basis of the body mass index (BMI). The BMI is the most practical way to evaluate the degree of excess weight. It is calculated from the weight and square of the height as follows:

$$\text{BMI} = \text{body weight (in kg)} \div \text{height (in meters)}^2$$

Classification of BMI — Underweight — $\text{BMI} < 18.5 \text{ kg/m}^2$

Normal weight — $\text{BMI} \geq 18.5 \text{ to } 24.9 \text{ kg/m}^2$

Overweight — $\text{BMI} \geq 25.0 \text{ to } 29.9 \text{ kg/m}^2$

Obesity — $\text{BMI} \geq 30 \text{ kg/m}^2$

Obesity Class I — BMI of 30.0 to 34.9 kg/m^2

Obesity Class II — BMI of 35.0 to 39.9 kg/m^2

Obesity Class III — $\text{BMI} \geq 40 \text{ kg/m}^2$. This type of obesity is also referred to as severe, extreme, or morbid obesity.

Waist circumference — Increasing central adiposity is associated with an increased risk of morbidity and mortality. Therefore, in addition to measuring body mass index, waist circumference should be measured to assess abdominal obesity. Patients with abdominal obesity (also called central adiposity, visceral, android, or male-type obesity) are at increased risk for heart disease, diabetes, hypertension, and dyslipidemia. The waist circumference is measured with a flexible tape placed on a horizontal plane at the level of the iliac crest as seen from the

anterior view . In adults with a BMI of 25 to 34.9 kg/m², a waist circumference greater than 102 cm (40 in) for men and 88 cm (35 in) for women is associated with a greater risk of hypertension, type 2 diabetes, and dyslipidemia, and CHD .

Determine etiology(cause) — Most cases of obesity are related to nonmedical disorders such as a sedentary lifestyle and increased caloric intake. Medications are a common cause of weight gain and obesity, in particular insulin, sulfonylureas, and antipsychotics. Smoking cessation is also associated with weight gain. Although uncommon, some obese patients have an endocrine disorder such as Cushing's syndrome.

ASSESSMENT OF RISK STATUS — In patients with a BMI ≥ 25 kg/m² or a waist circumference greater than 88 cm (women) or 102 cm (men), we suggest further evaluation of risk . Assessment of an individual's overall risk status includes determining the degree of overweight (BMI), the presence of abdominal obesity (waist circumference), and the presence of cardiovascular risk factors or comorbidities . In addition to the medical history, blood pressure measurement, and lipid profile that are done routinely in adults, overweight or obese patients should have a fasting glucose measurement .

Comorbidities — The coexistence of several diseases, including established CHD, other atherosclerotic disease, type 2 diabetes mellitus, and sleep apnea place patients in a very high-risk category for subsequent mortality. In addition to weight loss, these patients require aggressive modification of risk factors.

Cardiovascular risk factors — Other cardiovascular risk factors that contribute to risk should be identified, including hypertension, dyslipidemia (low HDL or high LDL), impaired fasting glucose, family history of premature CHD, age (≥ 45 for men, ≥ 55 for women), and cigarette smoking . Physical inactivity also affects risk in obese patients.

What is the most appropriate treatment? — Treatments for obesity either decrease energy intake or increase energy expenditure. Those that decrease energy intake have a greater potential for causing weight loss than those that increase energy expenditure through exercise.

Thus, for initial weight loss, treatment should be aimed at decreasing food intake and, when possible, increasing energy expenditure. The former may be accomplished by dieting, with or without the addition of anti-obesity drugs

Exercise — Increasing energy expenditure through physical activity has particular attractiveness in efforts at long-term maintenance of a lower body weight.

Drug therapy — Drug therapy may be a helpful component of the treatment regimen for obese subjects; it can be considered for those with a BMI greater than 30 kg/m², or a BMI of 27 to 30 kg/m² if they have comorbid conditions .

Liposuction — Removal of fat by aspiration after injection of physiologic saline has been used to remove and contour subcutaneous fat.

Maternal and child health

Sexual assault

Sexual assault is defined as any sexual act performed by one (or more) person(s) on another without consent. It may include the use or threat of force. In some cases, the person does not give consent to have sex because he or she is unconscious or otherwise incapacitated. A person may be raped by a stranger, an acquaintance or date, or a family member. Rape is a legal term and in the United States it refers to any penetration of a body orifice (mouth, vagina, or anus) involving force or the threat of force or incapacity (ie, associated with young or old age, cognitive or physical disability, or drug or alcohol intoxication) without consent.

Sexual assaults that are facilitated by the use of alcohol and drugs, which in some cases are voluntarily ingested by the victim, are increasingly recognized and are more common than classic forcible assaults among college students .

The following steps are recommended after sexual assault:

Find a safe environment away from the assailant

Call a close friend or relative – someone who will offer unconditional support

Seek medical care; do not change clothes, bathe, douche, or brush your teeth until evidence is collected. A complete medical evaluation includes evidence collection, a physical examination, treatment and/or counseling. You do not have to do any part of this evaluation that you do not want to do. Discuss filing a police report with a crisis counselor, experienced social worker, sexual assault nurse examiner, or healthcare provider. Follow-up with a healthcare provider one to two weeks later, Seek counseling services.

Clinical Presentation

The majority of rape victims who come to emergency rooms do not openly admit to having been sexually assaulted. They may complain of having been mugged or may voice concerns about acquired immune deficiency syndrome (AIDS) or other sexually transmitted diseases. Others may present with psychiatric symptoms including depression, anxiety, or a suicide attempt.

SEEK MEDICAL CARE — It is important to seek emergency medical care as soon as possible to begin coping with the complex emotional issues surrounding rape. The best chance of collecting accurate information and evidence is within the first 24 hours of the sexual assault, although some states allow evidence to be collected up to five days later. If the local hospital does not have access to a crisis counselor or sexual assault nurse examiner, ask your physician to collect evidence as part of the physical examination. Laboratory testing may also be needed.

Preventive treatments — Prophylactic medical treatment may be indicated for prevention of sexually transmitted infections and pregnancy. For prophylaxis against sexually transmitted infections, empiric recommended antimicrobial therapy for chlamydial, gonococcal, and trichomonal infections may be given. Emergency contraception can be offered as prophylaxis against pregnancy. A serum pregnancy test should be obtained prior to administration of emergency contraception to evaluate for preexisting pregnancy. Emergency contraception should be given within 72 hours of the assault, although it can still be effective up to 120 hours later. As most patients suffer significant psychological trauma as a consequence of sexual assault, The physician must be prepared to provide access to counseling. It is preferable that follow-up psychological counseling be provided by individuals who have extensive experience in the management of crisis-response to rape.

Follow-up care — A medical visit should occur within two weeks of the acute evaluation. Ongoing psychosocial support and counseling should be offered at that time. Pregnancy testing should be performed (even if the patient received postcoital contraception). Testing for gonorrhea, chlamydia, trichomonas, and bacterial vaginosis should occur in all patients who declined prophylactic treatment at the initial evaluation, or for those who request testing.

ABORTION - Abortion is termination of pregnancy before the fetus reaches the stage of viability.

Types of abortion

Spontaneous abortion: when abortion occurs spontaneously by natural intervention.

Induced unsafe abortion: is defined as a procedure for terminating unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking the minimal medical standards or both (WHO)

Induced safe abortion: by skilled person in proper health institution with minimal medical standard.

Studies indicate that unsafe abortion accounts for up to 25 – 35% of maternal deaths in Ethiopia. Therefore, unsafe abortion is critical public health problem in Ethiopia. Between 10 and 50% of all women who undergo unsafe abortions need medical care for complication. The most frequent complications are: incomplete abortion, sepsis, hemorrhage, shock, tetanus, genital tract injuries, intra abdominal injury such as uterine perforation or tearing of the uterus, and death. It is estimated that 80,000 women die each year due to complications from unsafe abortion. Long term health problems caused by unsafe abortion include chronic pelvic pain, pelvic inflammatory disease, fallopian tube blockage, AIDS and secondary infertility. Other possible consequences of unsafe abortion are ectopic pregnancy and an increased risk of spontaneous abortion or premature delivery in subsequent pregnancies, and result in school interruption.

Major reasons for abortions:

High prevalence of unwanted pregnancy from unmet need for family planning. It has been estimated that almost two in every five pregnancies worldwide are unplanned. There are many

reasons why women find themselves with an unwanted pregnancy. Unplanned pregnancies generally results from high-unmet need and ineffective use of contraceptives that culminate through induced abortions.

Four categories of abortion legislation world wide are :

Abortion is prohibited, or permitted only to save a woman's life. It is practiced in most African and central Asia countries in the world.

Permitted only to save a human's life and in one or more special cases such as rape, incest or fetal impairment or abnormality. Spousal and or parental consent required in some countries.

Permitted on physical or mental health grounds and in some countries in one or more special cases, such as rape, incest or fetal impairment of abnormality. Spousal and or /parental consent is required. 43 countries in the world, Ethiopia is among these countries.

In some other countries including around 65 countries in Europe it is permitted on broad socio-economic and health grounds or with out restriction or some times by requiring spouses' or parents' consent.

Penal Code of Ethiopia Regarding Abortion

The deliberate termination of pregnancy, at whatever stage or however affected, is punishable except otherwise provided. However termination of pregnancy is not punishable where it is done to save the pregnant woman from grave and danger to her life or health. These include pregnancy resulting from rape or incest, when the pregnancy risks the health or life of the woman, in the case of fetal abnormality and for other physical, psychological and social factors. There is no burden of proof on a woman who reports rape, therefore no obstacle to accessing abortion safely and quickly.

TYPES OF ABORTION PROCEDURES — There are two basic ways abortions are performed:

One is called "medical" or "medication abortion", meaning that you take medicine to end the pregnancy. The other is called "surgical" abortion, meaning that a doctor does a procedure to remove the pregnancy. The type of abortion procedure you have depends on a number of factors, including how far along you are in your pregnancy, what type of abortions are available in your

area, and your personal preferences. Medication abortion is most effective if you are less than 8 to 9 weeks pregnant.

ABORTION COMPLICATIONS — Legal abortions are safe and usually cause no serious complications. However, complications do sometimes occur, as with any medical or surgical procedure. Complications can include excessive bleeding, injury to the cervix or uterus, infection, and the potential need for more surgery to remove pregnancy tissue. These complications occur in a very small number of cases.

Family planning - The conscious effort of couples or individuals to plan for and attain their desired number of children and to regulate the spacing and timing of their births. Family planning is achieved through contraception and through the treatment of involuntary infertility. Benefits of FP include: Prevent maternal death and suffering, Dual use, Cost effective, Socioeconomic benefits, quality of life Family, Community, National, global

Contraceptives — Most birth control methods are quite effective if used properly. However, contraceptives can fail for a number of reasons, including incorrect use and failure of the medication, device, or method itself.

Types of Contraception - Different classification

Traditional Vs Non traditional(modern)

Hormonal VS Non Hormonal

Hormonal - Combined hormonal contraception (E+P), Progestogen-only contraception (P only);, Emergency hormonal contraception

Non hormonal - Intra-uterine devices, Barrier methods, Natural regulation of fertility
, Sterilization: male and female.

Hormonal Contraception: Mechanisms of Action

Suppress ovulation, Reduce sperm transport in upper genital tract (fallopian tubes), Change endometrium making implantation less likely. Thicken cervical mucus (preventing sperm penetration).

Certain birth control methods, such as intrauterine devices (IUDs) and injectable or implanted methods, have a low risk of failure (pregnancy). This is because they are the easiest to use properly. You should consider these methods if you want the lowest chance of a mistake or failure, which could lead to pregnancy.

Overall, birth control methods that are designed for use at or near the time of sex (eg, the condom, diaphragm) are generally less effective than other birth control methods (eg, IUD, birth control pill). If you forget to use birth control or if your method fails, there is an option to reduce your risk of becoming pregnant for up to 5 days after you have sex. This is called the morning after pill, or emergency contraception.

Emergency Contraception (EC)

Also known as: Morning-After Pills, Postcoital Contraception, Secondary Contraception

Taken within 120 hours of unprotected sex, Two doses Vs one dose

Birth control used after unprotected sex to prevent pregnancy

Combined Oral Contraceptives (COC): Progestin-Only Pills (POP): IUDs:

CHOOSING BIRTH CONTROL METHOD — It can be difficult to decide which birth control method is best because of the wide variety of options available. The best method is one that you will use consistently, is acceptable to you and your partner, and does not cause bothersome side effects.

Harmful Traditional practices

Early marriage is Marriage before the age of 18 is a reality for many young women.

In many parts of the world parents encourage the marriage of their daughters while they are still children in hopes that the marriage will benefit them both financially and socially, while also relieving financial burdens on the family. Protection from HIV/AIDS is another reason for child marriage. In actuality, child marriage is a violation of human rights, compromising the development of girls and often resulting in early pregnancy and social isolation, with little education and poor vocational training reinforcing the gendered nature of poverty. Pregnancy-

related deaths are known to be a leading cause of mortality for both married and unmarried girls between the ages of 15 and 19.

Types of marriage arrangements

1. Promissory marriage

2. Child marriage: usually the girl is under the age of 10 years. It may be of two types

‘ Madego’ the girl is given to in-laws after wedding ceremony to serve until maturity . This is worse because of sexual and physical abuse. ‘Meleles’ The girl does frequent visits to the in-laws to serve till maturity

3. Early Adolescent marriage: age of the girl is 10-15 years of age

After the ceremony the bride is taken to the groom's house . If she is not virgin , she is returned to her parent's the same night and the marriage is dissolved.

Scope of the problem in Ethiopia - Early marriage is one of several traditions harmful toward women that are commonly practiced in some regions of Ethiopia. In the Amhara region, 50 percent of girls are married by age 15. Parents often consent to a daughter's consummate marriage when she is as young as 10 or 12 years old, despite the legal marriage age of 18. Early marriage puts girls at risk of serious health consequences, including increased vulnerability to HIV/AIDS and obstetric problems due to immature bodies and undernourishment. Also, early childbearing has been shown to both increase a women's vulnerability to poverty and decrease her chances of completing her education.

N.B. Early or Child marriage is legally banned by both national and international laws. This should not be violated.

Health related problems of the early marriage are:

Sexual abuse, vaginal and perineum tear, Early pregnancy, childbearing and un wanted pregnancy

Maternal morbidity (Fistula) and mortality (hemorrhage, obstructed labor, etc.)

Social impact of early marriage

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Denied education and own choices, Illiterate mother more often raise illiterate child

Urban migration, Fistula patients, avoided by the husband and society

Psychological trauma from the first sexual experience, many children (early pregnancy)

Abduction:It is defined as un lawful kidnapping or carrying away a girl for marriage .

In almost all cases rape follows it . Parents tend to keep their daughters from school for fear of abduction. Abduction is a civil offence in Ethiopian law

Reasons given for abduction may be:

Fear of rejection by the bride's family, Dowry is too high

Presence of rival; another man may marry the girl , Avoid wedding ceremony for high cost

Status difference (e.g. man from upper family wouldn't stand before low class parents

Voluntary abduction , the girl agrees to go with the man, False sense of power.

Consequences of abduction:

Psychological and physical trauma , Risk of STI and HIV, Unwanted pregnancy and abortion, Vaginal and perineum tear from sexual intercourses (usually the girl is young), Obstructed labor

Socio-economic related problems ,e.g. an abducted mother do not send her daughter to school for fear of abduction; weak family with out love.

Female genital mutilation (FGM), also known as female genital cutting (FGC) and female circumcision (FC), is defined by the World Health Organization (WHO) as "all procedures that involve partial or total removal of the external female genitalia, or other injury to the female genital organs for non-medical reasons.This practice has come to represent an important rite of passage for girls into womanhood within some cultures. It is reinforced by customary beliefs that it maintains a girl's chastity, preserves fertility, ensures marriageability, improves hygiene, and enhances sexual pleasure for men.

Over all, Ethiopia has a prevalence rate of 69.7%–94.5%. Ethiopia's Regional statistics of the prevalence from the 2008 survey are:

- Afar Region 94.5%; Harare Region 81.2%; Amhara Region 81.1%; Oromia Region 79.6%;
- Addis Ababa City – 70.2%; Somali Region – 69.7%; Beneshangul Gumuz Region – 52.9%;
- Tigray Region – 48.1%; Southern Region – 46.3%.

PROCEDURE — Circumcision is performed between the ages of 5 and 12 years. Nonmedically trained operators usually perform FGC. Anesthesia and antibiotics are rarely administered. The instruments used may be old, rusty knives, razors, scissors, or heated pebbles, which are rarely washed between p Hemostasis is assured by catgut sutures, thorns, or homemade adhesive concoctions such as sugar, egg, or animal excrement. The girl's legs are bound around the ankles and thighs for approximately one week after the procedure, and she is kept in bed. However, some circumcisions are done under sterile conditions with appropriate instruments.

The World Health Organization classified FGC into four types of procedures

Type I- consists of excision of the prepuce, with or without excision of part of all of the clitoris.

Type II- involves clitoridectomy and partial or total excision of the labia minora

Type III, or infibulation, includes removing part or all of the external genitalia and reapproximation of the remnant labia majora, leaving a small neointroitus.

Type IV involves other forms of injuries to the genital region including pricking, piercing, stretching, burning, scraping or any other manipulation of external genitalia.

COMPLICATIONS AND OUTCOME

There are both short and long-term complications related to this procedure. It is also important to stress that not all women suffer complications.

Periprocedural complications — Surgical precision can be compromised by lack of anesthesia, the struggles of the child held forcibly in the lithotomy position, and the experience of the operator. Bleeding, Infection, Urethral injury, Fractures.

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Long-term gynecological issues - Women who have undergone type II or III FGC tend to suffer more long-term complications than those who have undergone type I or IV. The most common long-term complications are dysmenorrhea, dyspareunia, and chronic vaginal infections.

Urinary -Urethral strictures ,Meatal obstruction ,Chronic urinary tract infection

Pain -Chronic vaginal infections ,Dyspareunia ,Vaginismus ,Dysmenorrhea ,Menorrhagia

Infertility -Vaginal stenosis ,Dyspareunia

Immunization - The process of inducing immunity against specific disease.

Two types:

Active immunization – stimulation of the immune system to produce antibodies and cellular/humoral immune response against an infectious agent.

Passive immunization – providing temporary protection through administration of exogenously produced antibodies.

Vaccination - Administration of whole or parts of microorganism to prevent an infectious disease .A vaccine may be any one of the following:A live, but specially weakened (attenuated), organism - measles, mumps, rubella and varicella,rotavirus. Whole inactivated microorganism polio,hep A ,tetanus and diphtheria toxoid, ,Part of an organism – hepatitis B, acellular pertussis

Immunization schedules(EPI-extended program of immunization)

When	Vaccines
At birth	BCG OPV 0
At 6 week	OPV 1 DPT Hib Hb 1

At 10 week	OPV 2 DPTHibHb 2
At 14 week	OPV 3 DPTHibHb 3
At 9 month	Measles +Vit A Pneumococcal

BCG vaccine — A TB vaccine (called Bacillus Calmette-Guerin, or BCG) is given in many countries to prevent infection with TB. Diphtheria, tetanus, and pertussis (DPT vaccine), Oral Polio vaccine(OPV) , Haemophilus influenza type B, called “Hib vaccine” , Measles, mumps, and rubella(MMR vaccine)

What side effects can vaccines cause? — Often, vaccines cause no side effects. When they do cause side effects, they can cause: Redness, mild swelling, or soreness where the shot was given
A mild fever, A mild rash, Headache or body aches.

Breast and Complementary Feeding

Exclusive (or Full) Breast feeding (EBF): all fluid, energy and nutrients are from breast milk (except small amounts of medicinal supplements); minimal pathogen exposure.

Almost EBF: refers to use of water or other non-nutritive liquids plus EBF

Partial BF: mixed feeding with breast milk plus non-human milk, some solids, other fluids as sources of energy and nutrients

Complementary Feeding

Period of complementary Feeding (CFg):when other foods or liquids are given along with breast milk (previously “weaning period”)

Complementary Foods (CFs): food or liquids other than breast milk given to young children during the period of complementary feeding

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Transitional Foods (TF): nutrient dense CFs designed to meet nutritional needs of child

Weaning: complete cessation of any breast feeding.

Breast feeding and complementary feeding practices represent the “front line” of maternal care, nurturing and interaction with infants and young children;

Adequacy of feeding determines many aspects of child growth, health and development.

Breast feeding also can affect maternal health.

Breast milk supplies ideal mix, density and physiologic form of nutrients to promote adequate infant growth & development, Reduces exposure of infant to entero pathogens, Anti-bacterial & anti-viral, Reduces infant infections, Provides biologic & emotional bond between mother & infant

Helps maternal health: reduces risk of ovarian & breast cancer, post-partum hemorrhage & anemia, increases birth spacing.

WHO/UNICEF Recommendation: Exclusively breast feed for 1st 6 months

EBF can provide adequate: Energy, Nutrients, Fluid, Protection from infection, Nutrition for growth, Feeding colostrum: important, Avg. intake: 700-800 ml/day Individual exceptions exist

WHO Global Infant Feeding Recommendations, 2002

Start BF early (<1hr after birth), Exclusive breast feeding for 6 months

Start complementary feeding at 6 months with continued breast feeding to ≥ 2 yrs

Provide appropriate complementary feeding: Timely, Adequate, Safe, Properly fed

Complementary Feeding

Timely: CFs introduced when need for energy and nutrients exceeds that provided by BF

Adequate: CFs should provide sufficient energy, protein, and micronutrients

Safe: CFs that they are hygienically stored and prepared and fed

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Properly fed: CFs given in line with child's signals for appetite and satiety and that meal frequency and feeding method (active) are suitable for age.

The "Weanling's Dilemma" Delayed introduction of complementary foods may lead to insufficient energy and nutrient intakes and poor growth BUT Premature introduction of CF can increase pathogen exposure, risk of infection and mortality

WHO/UNAIDS/UNICEF Feeding Options for Infants of HIV-Infected Mothers

Exclusive breast feeding by mother for 1st 6 months of life, continuing to >2 yrs

EBF with early cessation & rapid weaning to replacement milk

Breast milk expression with heat treatment, fed via cup

Wet-nursing by an HIV-mother

Commercial infant formula

Malnutrition is defined as chronic inadequacy in food instances combined with high levels of illness. More than half of the deaths in children have stunting and wasting as the underlying cause. Severe malnutrition is primarily a problem in developing countries. Occurs more frequently when infections impose additional demands, induce greater loss of nutrients. Stunting is due to chronic malnutrition. Wasting and edema are due to acute malnutrition.

PROTEIN-ENERGY MALNUTRITION — Clinical findings in children with chronic undernutrition usually include diminished height, poor weight gain, and deficits in lean body mass and adipose tissue. Other features include reduced physical activity, mental apathy, and retarded psychomotor and mental development. Worldwide, severe protein energy malnutrition is a leading cause of death among children younger than five years of age. Malnourished children also suffer from numerous associated complications. They are more susceptible to infection, especially sepsis, pneumonia, and gastroenteritis. Vitamin deficiencies and deficiencies of minerals and trace elements can also be seen.

There are two types

Primary – nutritional insufficiency Inadequate protein, calorie and nutrient intake

Secondary – malnutrition following infections, injury, chronic disease, excessive nutrient loss as occurs in chronic diarrhea, HIV, malabsorption syndrome etc...

Marasmus — Marasmus is characterized by the wasting of muscle mass and the depletion of body fat stores. It is the most common form of PEM and is caused by inadequate intake of all nutrients, but especially dietary energy sources (total calories). Classically, children with marasmus may have severe constipation and are ravenously hungry once refeeding is in progress. Physical examination findings include:

Diminished weight and height for age, Emaciated and weak appearance, Bradycardia, hypotension, and hypothermia, Thin, dry skin, Redundant skin folds caused by loss of subcutaneous fat. Thin, sparse hair that is easily plucked.

Kwashiorkor — Kwashiorkor is characterized by marked muscle atrophy with normal or increased body fat. Pure kwashiorkor is characterized by inadequate protein intake in the presence of fair to good energy intake. Anorexia is almost universal. Physical examination findings include: Normal or nearly normal weight and height for age, Anasarca (severe generalized edema) Pitting edema in the lower extremities and periorbitally, Rounded prominence of the cheeks ("moon-face") Pursed appearance of the mouth. Dry, atrophic, peeling skin with confluent areas of hyperkeratosis and hyperpigmentation. Dry, dull, hypopigmented hair that falls out or is easily plucked. Hepatomegaly (from fatty liver infiltrates), Distended abdomen with dilated intestinal loops. Intermittent periods of adequate protein intake restores hair color, resulting in alternating loss of hair color interspersed between bands of normal pigmentation.

Mixed marasmus-kwashiorkor — Mixed marasmus-kwashiorkor (edematous malnutrition) may occur in a child who has inadequate dietary intake of all nutrients and is triggered by a common infectious illness of childhood. Children with mixed marasmus-kwashiorkor often have anorexia, dermatitis, and sometimes neurological abnormalities (depression and flat affect) and hepatic steatosis .

Treatment

ReSoMal — ReSoMal is an oral rehydration solution developed for use in severely malnourished children. It consists of the standard WHO rehydration oral solution (ORS) that has been modified by decreasing sodium and increasing potassium concentrations (table 4). This solution is used to correct the hypernatremia and potassium deficiency that occur in severe malnutrition. ReSoMal contains glucose (125 mmol/L), sodium (45 mmol/L), potassium (40 mmol/L), magnesium (3 mmol/L), zinc (0.3 mmol/L), and copper (0.045 mmol/L). ReSoMal is available commercially.

This solution also can be made as follows:

Dilute one packet of the standard WHO-recommended ORS into two liters of water (instead of one liter of water used for the standard ORS dilution).

Add 50 g of sucrose (25 g/L); 50 g of sucrose is approximately 4 tablespoons.

Add 40 mL (20 ml/L) of mineral mix solution.

DIARRHEA — Diarrhea refers to the passage of loose or watery stools or an increased frequency of stools for the child and occurs at some point in the life of nearly every child. Diarrhea is not a disease, but is a symptom of a number of illnesses. Diarrhea can lead to dehydration, which alters the child's natural balance of water, and to electrolyte (sodium, potassium, chloride) imbalance. It can be serious if not treated promptly.

Frequency — It is normal for young infants to have up to 3 to 10 stools per day. Diarrhea can usually be defined as an increase in stool frequency to twice the usual number per day in infants, or three or more loose or watery stools per day in older children.

Consistency — Development of stools that are runny, watery, or contain mucus is a significant change that should be monitored. The presence of visible blood in stool is never normal and always requires medical attention.

Duration — A prolonged history of diarrhea (one week or longer) is evaluated and treated differently than an acute case of diarrhea (lasting less than one week).

DIARRHEA CAUSES — The most common cause of acute diarrhea is a viral infection. Other causes include bacterial infections, side effects of antibiotics, and infections not related to the gastrointestinal (GI) system. In addition, there are many less common causes of diarrhea.

Symptoms of viral infection can include watery diarrhea, vomiting, fever (temperature higher than 100.4°F or 38°C), headache, abdominal cramps, lack of appetite, and muscle aches. No specific treatment is available for viral causes of diarrhea. Children with diarrhea from viral infections are best treated with supportive measures (oral rehydration solution, limited diet, rest). Bacterial infection is sometimes hard to distinguish from viral infection. Persistent high fever (higher than 40°C or 104°F) and diarrhea that is bloody or contains mucus are somewhat more common with bacterial infection. Most children with bacterial infection do not require antibiotics and will improve with time and supportive measures, however, treatment may be necessary in certain situations. Diarrhea from parasitic infections may last longer than two weeks.

Antibiotic-associated diarrhea — A number of antibiotics can cause diarrhea in both children and adults. The diarrhea is usually mild and typically does not cause dehydration or weight loss.

Transmission

Fecal- oral

Direct & Indirect contact

Incidence - Very peak 6-12months of age □ weaning + the time when maternal immunity is used up!

Behavioral risk factors - Inadequate breast feeding(first 4-6 months).Using feeding bottles,Eating food hrs after cooking,Drinking contaminated water, Not washing hands, Host factors, Malnutrition, Measles, Immunosuppression, young age.

Assessment of Diarrhea - For how long? ,Is there blood in the stool? Assess for sign of DHN

Look at the child's general condition.

Is the child: Lethargic or unconscious? Restless and irritable?

Look for sunken eyes.

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Offer the child fluid. Is the child: Not able to drink or drinking poorly? Drinking eagerly, thirsty?

Pinch the skin of the abdomen. Does it go back: Very slowly (longer than 2 seconds)?
Slowly?

Severe dehydration will have two of these signs:

sensorium abnormally sleepy or lethargic, sunken eyes, drinking poorly or not at all, very slow skin pinch

Some dehydration will have two of these signs:

restlessness or irritability, sunken eyes, drinking eagerly, slow skin pinch

No dehydration - None of these signs

Laboratory Investigation – CBC , Stool specimen(mucus, blood, WBC), Rectal swab

Culture blood, Stool culture: in bloody diarrhea, WBC, immunocompromized Serum electrolytes

Treatment of diarrhea

Main principles

1. Replace lost water and salts.
2. Continue to feed to prevent malnutrition.

Antibiotics & antiprotozoals when needed. Prevention of diarrhea

Public health

Health: “Is a state of complete physical, mental and social well being and not merely absence of disease

Disease

☐ indicates a wrong state of physiology or anatomy

☐ interferes with normal functions of the body

□essentially includes the mindor infirmity. “

Health Care System of Current Ethiopia

Ethiopia is a country having the poorest health system in the world. Maternal and infant mortality rates are among the highest. Health Care System of Current Ethiopia Comprises Four Tiers :PHCU, District/Zonal Hospitals, Regional Referral Hospitals and Central Referral or Teaching Hospitals. No of Facilities : 149 Hospitals,732 Health centers,1, 517 Health stations, 271 Private clinics not for profit ,1,788 Private clinics for profit and 11,446 Health posts Human resource in service Physicians =2,085, Health officers = 1,242,Nurses = 16,765,Health assistants = 2,140, Para medicals=7,731, Health extension workers =24,571.The overall health care system depends on low level health workers rather than doctors. Ethiopian doctors contributed very little for the recent improvement of the country's health care. Those who work in the country are concentrated in major cities and have very little contribution for preventive medicine, which is believed to be the most important aspect of health care for the poor rural people contributing about 85% of the total population. For your information Ethiopia has a population of 80 million. The ratio of doctors to the population is estimated 1:37000. District health system comprising a primary hospital (with population coverage of 60,000-100,000 people), health centers (1/15,000-25,000 population) and their satellite Health Posts (1/3,000-5,000 population) that are connected to each other by a referral system. Menlik II hospital opened in this earlier in this era - “Kakim Workeneh”-the first Ethiopian physician.

Epidemic: The occurrence of health related condition/disease in excess of the usual frequency in a given area or among a specific group of people over a particular period of time.

Outbreak: Epidemics of shorter duration covering a more limited area.

Cluster: is an aggregation of cases in a given area over a particular period without regard to whether the number of cases is more than expected.

Pandemic: An epidemic involving several countries or continents and affecting a large number of people. For example the worldwide occurrence of HIV/AIDS is a pandemic. Pandemics and notable epidemics through history- Cholera ,Influenza ,Typhus , Smallpox ,Measles ,Tuberculosis ,Leprosy , Malaria ,Yellow fever.

Types of epidemics

Epidemics (outbreaks) can be classified according to the method of spread or propagation, nature and length of exposure to the infectious agent, and duration.

Common Source Epidemic. Disease occurs as a result of exposure of a group of susceptible persons to a common source of a pathogen, often at the same time or within a brief time period. When the exposure is simultaneous, and the resulting cases develop within one incubation period it is called a point source epidemic.

The epidemic curve in a point source epidemic will commonly show a sharp rise and fall. Food borne epidemic following an event where the food was served to many people is a good example of point source epidemic. If the exposure to a common source continues over time it will result in a continuous common source epidemic. A waterborne outbreak that is spread through a contaminated community water supply is an example of a common source epidemic. The epidemic curve may have a wide peak because of the range of exposures and the range of incubation periods.

Propagative/ Progressive Epidemics.

The infectious agent is transferred from one host to another. It can occur through direct person to person transmission or it can involve more complex cycles in which the agent must pass through a vector as in yellow fever and malaria. Propagative spread usually results in an epidemic curve with a relatively gentle upslope and somewhat steeper tail. An outbreak of malaria is a good example for propagative epidemic.

When it is difficult to differentiate the two types of epidemics by the curve, spot map (studying the geographic distribution) can help. In the propagated epidemics there will be successive generations of cases.

Mixed Epidemics. The epidemic begins with a single, common source of an infectious agent with subsequent propagative spread. For example: Many food borne pathogens result in mixed epidemics.

Latrine

The word latrine can refer to a toilet or a simpler facility used as a toilet, generally without bowl. It can be a communal trench in the earth in a camp, a simple pit, or more advanced designs, including pour-flush systems or ecological latrines. The term is derived from the Latin lavatrina meaning bath.

Types

To mention some common types - Traditional pit latrine, Ventilated improved pit latrine, Trench latrine , Water seal/water flush latrine, Bucket/ pail latrine, Chemical latrine, Composting /Eco-san latrine

In locations with no functioning toilets, latrines or trench toilets are typically set up for use by groups of men and/or women. They typically consist of pits or trenches, 4 feet (1.2 m) to 5 feet (1.5 m) deep and 4 feet (1.2 m) to 20 feet (6.1 m) long, dug into the ground. Many Army units, if they stayed in one location long, had primitive shelters and seating arrangements arranged over the pits. The pits are typically kept well away from any water sources to minimize possible disease transmission. After extended use the pits were typically filled in.

Design about 60 liters per year per person in soils with good moisture percolation capacity

Line the first 1m. as water tight, 1m.x 3m. depth will serve for five families to 5-7 yr.

Located down ward the water source at 15meters, A minimum of about 6meters from a dwelling.

Between the end of the pit and the water table should be 3m. distance

VIPL - low cost , odour free, flies controlled, safe understructure, easy to clean , most convenient for urban population

An ecological sanitation (ecosan) viewpoint sees human waste and wastewater as an opportunity. When properly designed and operated, ecosan systems provide a hygienically safe, economical, and closed-loop system to convert human wastes into nutrients to be returned to the soil, and water to be returned to the land. Alternatively, solid wastes are converted into a biofuel. The primary application for ecosan systems has been in rural areas where connection to a sanitary sewer system is not possible, or where water supplies are very limited.

The main objectives of ecological sanitation are:

To reduce the health risks related to sanitation, contaminated water and waste

To prevent the pollution of surface and ground water

To reuse nutrients or energy contained within wastes

Hand washing for hand hygiene - is the act of cleaning one's hands with or without the use of water or another liquid, or with the use of soap, for the purpose of removing soil, dirt, and/or microorganisms.

Medical hand hygiene pertains to the hygiene practices related to the administration of medicine and medical care that prevents or minimizes disease and the spreading of disease. The main medical purpose of washing hands is to cleanse the hands of pathogens (including bacteria or viruses) and chemicals which can cause personal harm or disease. This is especially important for people who handle food or work in the medical field, but it is also an important practice for the general public. People can become infected with respiratory illnesses such as influenza or the common cold, for example, if they don't wash their hands before touching their eyes, nose, or mouth.

-It protects best against diseases transmitted through fecal-oral routes (such as many forms of stomach flu) and direct physical contact (such as impetigo).

Substances used - Soap and detergents, Water temperature, Solid soap, Antibacterial soap, Hand antiseptic

Techniques

Soap and water- Conventionally, the use of soap and warm running water and the washing of all surfaces thoroughly, including under fingernails, is seen as necessary. The most commonly missed areas when washing hands are the thumb, the wrist, and areas between the fingers.

Artificial nails and chipped nail polish harbor the growth of microorganisms. [19] Rinse hands with warm water first keeping hands below wrists and forearms. This prevents contaminated water from running down the arms. The use of warm water helps to open up pores which helps with the removal of microorganisms without removing important skin oils.

Hand antiseptic- Enough hand antiseptic or alcohol rub must be used to thoroughly wet or cover both hands. The front and back of both hands and between and the ends of all fingers are rubbed for approximately 30 seconds until the liquid, foam or gel is dry.

Drying - Effective drying of the hands is an essential part of the hand hygiene process, but there is some debate over the most effective form of drying in washrooms. A growing volume of research suggests paper towels are much more hygienic than the electric hand dryers found in many washrooms.

Medical use

Medical hand-washing is for a minimum of 15 seconds, using generous amounts of soap and water or gel to lather and rub each part of the hands.[28] Hands should be rubbed together with digits interlocking. If there is debris under fingernails, a bristle brush may be used to remove it. Since germs may remain in the water on the hands, it is important to rinse well and wipe dry with a clean towel. The purpose of hand-washing in the health-care setting is to remove pathogenic microorganisms ("germs") and avoid transmitting them.

The World Health Organization has "Five Moments" for washing hands.

before patient care, after environmental contact, after exposure to blood/body fluids, before an aseptic task, and after patient care.

Pros and cons of hand washing practices

Pros

helps minimize the spread of influenza

diarrhea prevention

avoiding respiratory infections

a preventive measure for infant deaths at their home-birth-deliveries

Cons

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prone to skin damage

Global warming and its health effect - An increase in the average temperature of the earth's atmosphere (especially a sustained increase that causes climatic changes)

The fate of solar energy when reached the earth

Absorption by earth and natural green house gases (CO₂, CH₄, water vapour)

Infrared radiation reflection by earth's crust

Infrared radiation absorption by the green house gases

Infrared radiation retention by green house gases

Resulting in an acceptable level of temperature at the earth at 150C

Could have been 190C less if the reflected heat from the earth escaped to the space.

IR absorption by green house gases as a function of concentration of these gases.

2.3 Anthropogenic (man made) “green house gases” and their sources

CO₂: fossil and biomass fuel burning, forest fire, etc.

N₂O: N₂ containing fertilizers processing, vehicles

CH₄: animal dung decomposition, waste landfills, wet lands, etc

CFCs: factories.

CO₂ and CFCs are main contributors to IR absorption:

Potential health effects due to global warming –

Direct effects -Thermal extreme effect(heat waves): The skin, CNS and Circulatory system the most affected: Thermo-regulation disturbance , Heat stroke and exhaustion ,Decreased male fertility , Cerebrovascular stroke, etc.

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Effect on the respiratory organs: persons with chronic diseases like asthma, bronchitis, cardiovascular are the most affected.

Weather instability and natural calamities: cyclones, land slides, draught, flooding, etc.

Indirect effects - Vector borne diseases: Mosquitoes (malaria, yellow fever, rift valley fever), Tsetse fly (African sleeping sickness), Fly (faeco-oral related diseases, onchocerciasis, leishmaniasis, schistosomiasis.), Waterborne diseases: Due to water shortage & contamination, Sea-level rise: Damages fresh water, affects soil salinity,

Agricultural productivity: Reduced rainfall, Increased pests, Decreased soil fertility, Decreased farming land, etc. Affects both staple foods & horticulture harvesting; and animal husbandry. Food shortages and malnutrition, Impacts to socio-economic development.

Exercise and its health benefit

What are the benefits of exercise? — Exercise has many benefits. It can:

Burn calories, which helps people lose weight

Help control blood sugar levels in people with diabetes

Lower blood pressure, especially in people with high blood pressure

Lower stress and help with depression

Keep bones strong, so they don't get thin and break easily

Lower the chance of dying from heart disease

What are the main types of exercise? — There are 3 main types of exercise. They are:

Aerobic exercise — Aerobic exercise raises a person's heart rate. Examples of aerobic exercise are walking, running, or swimming.

Resistance training — Resistance training helps make your muscles stronger. People can do this type of exercise using weights, exercise bands, or weight machines.

Stretching — Stretching exercises help your muscles and joints move more easily.

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It's important to have all 3 types of exercise in your exercise program. That way, your body, muscles, and joints can be as healthy as possible.

When you start an exercise program, start slowly. For example, do the exercise at a slow pace or for a few minutes only. Over time, you can exercise faster and for longer periods of time.

What should I do when I exercise? — Each time you exercise, you should:

Warm up — Warming up can help keep you from hurting your muscles when you exercise. To warm up, do a light aerobic exercise (such as walking slowly) or stretch for 5 to 10 minutes.

Work out — During a workout, you can walk fast, swim, run, or use an exercise machine, for example. You should also stretch all of your joints, including your neck, shoulders, back, hips, and knees. At least 2 times a week, you can add resistance training exercises to your workout.

Cool down — Cooling down helps keep you from feeling dizzy after you exercise and helps prevent muscle cramps. To cool down, you can stretch or do a light aerobic exercise for 5 minutes.

How often should I exercise? — Doctors recommend that people exercise at least 30 minutes a day, on 5 or more days of the week. If you can't exercise for 30 minutes straight, try to exercise for 10 minutes at a time, 3 or 4 times a day.

When should I call my doctor or nurse? — If you have any of the following symptoms when you exercise, stop exercising and call your doctor or nurse right away:

Pain or pressure in your chest, arms, throat, jaw, or back, Nausea or vomiting

Feeling like your heart is fluttering or racing very fast, Feeling dizzy or faint.

On days when you really can't find time to exercise, there are ways that you can be more active. For example, you can: Take the stairs instead of the elevator, Park in a parking space that is farther away from the door, Take a longer route when you walk from 1 place to another

What else should I do when I exercise? — To exercise safely and avoid problems, be sure to:

Drink fluids during and after exercising (but drinks should not have caffeine in them)

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Avoid exercising outside if it is too hot or cold out

Wear layers of clothes, so that you can take clothes off if you get too hot

Wear shoes that fit well and support your feet.

BE PERFORMED AND

HAVE A GOOD LUCK!