CARE OF AT-RISK / HIGH-RISK / SICK ADOLESCENT

- **Adolescent Health.** The range of approaches to preventing, detecting or treating teen's health and well-being.
- Young people's health is often complex and requires a comprehensive, biopsychosocial approach.
- **WHO** describes the leading health-related problems in the age group 10 – 19 years to include:
  I. Adolescent Pregnancy and Childbirth
  II. Sexually Transmitted Infections
  III. Injury
  IV. Suicide
  V. Substance Abuse
  VI. Anorexia Nervosa
  VII. Obesity
  VIII. Bone Tumors
  IX. Amenorrhea
  X. Dysmenorrhea

I. ADOLESCENT PREGNANCY / TEENAGE PREGNANCY

- A pregnancy in a female under 20 years old.
- Pregnancy can occur with sexual intercourse after the start of ovulation, which can be before the menarche, but usually occurs after the onset of periods.
- In well-nourished females, the first period usually takes place around the age of 12 or 13.

Effects

Adolescent
- Being a young mother in a first world country can affect one's education
- Young motherhood in an industrialized country can affect employment and social class.
- Teenage women who are pregnant or mothers are seven times more likely to commit suicide than other adolescents.
- Often, these pregnancies are hidden for months resulting in a lack of adequate prenatal care and dangerous outcomes for the babies.

Child
- Early motherhood can affect the psychosocial development of the infant.
- More likely to be born prematurely with LBW, predisposing them to many other lifelong conditions.
- Children are at higher risk of intellectual, language, and socio-emotional delays.
- Developmental disabilities and behavioral issues are increased in children born to teen mothers.

Risk Factors

1. ***Culture***
   - Teenage pregnancies are higher in societies where it is traditional for girls to marry young and where they are encouraged to bear children as soon as they are able.
   - *Example* – in sub-Saharan African countries, early pregnancy is often seen as a blessing because it is proof of the young woman's fertility.
2. ***Other Family Members***
   - Teen pregnancy and motherhood can influence younger siblings.
3. ***Role of Substance Use***
   - Strongest evidence link – alcohol, cannabis, "ecstasy", and other substituted amphetamines.
   - Least evidence to support a link - opioids such as heroin, morphine, and oxycodone.

4. ***Early Puberty***
   - Girls who mature early (precocious puberty) are more likely to engage in sex at a younger age.
5. ***Sexual Abuse***
   - Before age 15, majority of first-intercourse experiences among females are reported to be non-voluntary; most were coerced by males who on average were six years their senior.
6. ***Socioeconomic Factors***
   - Poverty is associated with increased rates of teenage pregnancy.
   - *Example* – Economically poor countries such as Nigeria and Bangladesh have far more teenage mothers compared with economically rich countries such as Switzerland and Japan.
7. ***Childhood Environment***
   - Women exposed to abuse, domestic violence, and family strife in childhood – the risk of becoming pregnant as a teenager increases with the number of adverse childhood experiences.
8. ***Media Influence***
   - Adolescents who are more exposed to sexuality in the social media are also more likely to engage in sexual activity themselves.

II. SEXUALLY TRANSMITTEDC INFECTIONS (STIs)

- Also referred to as **Sexually Transmitted Diseases** (**STDs**) are infections that are commonly spread by sexual activity, especially vaginal intercourse, anal sex, and oral sex.

Causes

1. **Transmission –** STI present in pregnant woman may be passed onto infant before or after birth.
2. **Bacterial**
   - Chlamydia (Chlamydia Trachomatis)
   - Gonorrhea (Neisseria Gonorrhoeae), colloquially known as "the clap"
   - Syphilis (Treponema Pallidum)
3. **Fungal –** Candidiasis (yeast infection)
4. **Viral**
   - ***Viral Hepatitis*** (Hepa B virus) – saliva, venereal fluids. (**Note:** Hepa A & Hepa E are transmitted via the fecal-oral route, Hepa C is rarely sexually transmittable, and route of transmission of Hepa D (only if infected with B) is uncertain, but may include sexual transmission.
   - ***Herpes Simplex*** (Herpes Simplex virus 1, 2) skin and mucosal, transmissible with or without visible blisters.
   - ***HIV*** (Human Immunodeficiency Virus) – venereal fluids, semen, breast milk, blood
   - ***HPV*** (Human Papilloma Virus) –'High risk' types of HPV cause almost all cervical cancers, as well as some anal, penile, and vulvar cancer.
5. **Parasites**
   - ***Crab louse***, colloquially known as "crabs" or "pubic lice" (***Pthirus pubis***). The infestation and accompanying inflammation is ***Pediculosis pubis***.
   - ***Scabies*** (Sarcoptis scabiei)
   - ***Trichomoniasis*** (Trichomonas vaginalis), colloquially known as "***Trich***"

Main Types

1. **Chlamydia** – caused by the bacterium ***Chlamydia Trachomatis***.
   - In women, ***symptoms*** may include abnormal vaginal discharge, burning during urination, and bleeding in between periods, although most women do not experience any symptoms.
   - ***Symptoms*** in men include pain when urinating, and abnormal discharge from their penis.
   - If left untreated in both men and women, Chlamydia can infect the urinary tract and potentially lead to ***Pelvic Inflammatory Disease*** (PID) which can cause serious problems during pregnancy, infertility, and ectopic pregnancy.
   - Can be cured with antibiotics.
2. **Herpes Simplex –** caused by infection with ***Herpes Simplex Virus*** (HSV).

- ***HSV-1*** is typically acquired orally and causes cold sores.
- ***HSV-2*** is usually acquired during sexual contact and affects the genitals, however either strain may affect either site.
- ***Symptoms***: small fluid-filled blisters, headaches, backaches, itching or tingling sensations in the genital or anal area, pain during urination, flu like symptoms, swollen glands, or fever.
- There is no cure for the disease but there are antiviral medications that treat its symptoms and lower the risk of transmission.

3. **Human Papilloma Virus (HPV)**
   - There are more than 40 different strands of HPV and many do not cause any health problems. In 90% of cases the body's immune system clears the infection naturally within 2 years.
   - Some cases may not be cleared and can lead to genital warts or cervical cancer and other HPV related cancers.
   - ***Symptoms*** might not show up until advanced stages. It is important for women to get ***Pap Smears*** in order to check for and treat cancers.
   - There are also two vaccines available for women (Cervarix and Gardasil) that protect against the types of HPV that cause cervical cancer.
   - Transferred through genital-to-genital contact or oral sex. Infected partner may be asymptomatic

4. **Gonorrhea** is caused by bacterium that lives on moist mucous membranes in the urethra, vagina, rectum, mouth, throat, and eyes.
   - The infection can spread through contact with the penis, vagina, mouth or anus.
   - ***Symptoms*** in men – burning and pain while urinating, increased urinary frequency, penile discharge (white, green, yellow), swollen urethra, swollen or tender testicles, or sore throat.
   - ***Symptoms*** in women – vaginal discharge, burning or itching while urinating, painful sexual intercourse, severe pain in lower abdomen or fever (infection spreads to fallopian tubes); however, many women do not show any symptoms.
   - There are some antibiotic resistant strains for Gonorrhea but most cases can be cured with antibiotics.

5. **Syphilis** is caused by a bacterium. Untreated, it can lead to complications and death.
   - ***Clinical manifestations*** of syphilis include the ulceration of the uro-genital tract, mouth or rectum; if left untreated the symptoms worsen.

6. **Trichomoniasis** is a common STI caused by a protozoan parasite called ***Trichomonas vaginalis***.
   - Affects both women and men, but symptoms are more common in women.
   - Most patients are treated with an antibiotic called metronidazole, which is very effective.

7. **HIV** (Human Immunodeficiency Virus) damages the body's immune system.
   - The virus kills CD4 cells, which are WBCs that help fight off various infections.
   - HIV is carried in body fluids, and is spread by:
     - ✓ Sexual activity
     - ✓ Contact with infected blood
     - ✓ Breast feeding
     - ✓ Childbirth
     - ✓ From mother to child during pregnancy
   - When HIV is at its most advanced stage, an individual is said to have ***AIDS*** (Acquired Immunodeficiency Syndrome).
   - Stages of the progression:
     - ✓ ***Primary infection*** – flu like symptoms (headache, fatigue, fever, muscle aches) for 2 weeks.
     - ✓ ***Asymptomatic infection*** – symptoms usually disappear, and remain asymptomatic for years.
     - ✓ ***Symptomatic infection*** – immune system is weakened, has a low cell count of CD4+TCells.
     - ✓ ***AIDS*** – infection becomes life-threatening. People with AIDS fall prey to opportunistic infections and die as a result.
   - There is no known cure for HIV/AIDS but there are antiretroviral (ARVs) drugs that help suppress the virus. If virus are suppressed, people can lead longer and healthier lives.
   - Even though their virus levels may be low they can still spread the virus to others.

Prevention

- ***Vaccination*** – Available vaccines that protect against some viral STIs, such as Hepatitis A, Hepatitis B, and some types of HPV.
- Mutual monogamy
- Abstinence.

III. INJURY

- Injury is the major cause of disability among adolescents and is the number one cause of death in this age group.
- An injury is usually defined by intention:
  A. Unintentional (Accidental) Injuries are motor vehicle accidents, poisoning, drowning, falls and burns.
  B. Intentional Injuries (Violence) can be divided into the categories of:
    1. Self-directed (as in suicide or self-harm)
    2. Inter personal (child, partner, elder, acquaintance, stranger)
    3. Collective (in war and by gangs)
    4. Other intentional injuries (including deaths due to legal intervention)
- Injuries can also be addressed according to their settings such as: home, sports and leisure, workplace or road.
- Centers for Disease Control and Prevention (CDC) estimates that 7 teens die every day from motor vehicle injuries and even more are treated in ERs every day for serious injuries. Teens age 16 to 19 have a much greater risk of death or injury in a car crash than any other age group.
- Violence comes in second in adolescent's greatest health risks. Teens could face a number of potentially violent situations.

IV. SUICIDE

- Although suicide is relatively rare among children, the rate of suicides and suicide attempts increases greatly during adolescence.
- Suicide is the third-leading cause of death for 15- to 24-year-old, after accidents and homicide.
- Girls think about and attempt suicide about twice as often as boys, and tend to attempt suicide by overdosing on drugs or cutting themselves.
- Boys die by suicide about four times as often as girls, perhaps because they tend to use more lethal methods, such as firearms, hanging, or jumping from heights.

Factors that Increase Risk of Suicide among Adolescents Include:

- Psychological disorder, especially depression, bipolar disorder, and alcohol and drug use.
- Feelings of distress, irritability, or agitation
- Feelings of hopelessness and worthlessness that often accompany depression
- Previous suicide attempt
- Family history of depression or suicide
- Emotional, physical, or sexual abuse
- Lack of a support network, poor relationships with parents or peers, and feelings of social isolation.
- Dealing with bi/homosexuality in unsupportive family or community, or hostile school environment

Warning Signs

- Suicide among teens often happens after a stressful life event, such as problems at school, a breakup with a boyfriend or girlfriend, the death of a loved one, or a major family conflict.
- Teens who are thinking about suicide might:
  - Talk about suicide or death in general
  - Give hints that they might not be around anymore

- Talk about feeling hopeless or feeling guilty
- Pull away from friends or family
- Write songs, poems, or letters about death, separation, and loss
- Start giving away treasured possessions to siblings or friends
- Lose the desire to take part in favorite things or activities
- Have trouble concentrating or thinking clearly
- Experience changes in eating or sleeping habits
- Engage in risk-taking behaviors
- Lose interest in school or sports

It's important to see warning signs as serious, not as "attention-seeking" to be ignored.

Management. The parent should:

– Keep a close eye on a teen who is depressed and withdrawn.

– Keep the lines of communication open and express concern, support, and love. It's important not to minimize or discount what the adolescent is going through, as this can increase his or her sense of hopelessness.

If your adolescent doesn't feel comfortable talking with the parent, suggest a more neutral person, such as another relative, a clergy member, a coach, a school counselor, or the child's doctor.

- Ask questions

V. SUBSTANCE ABUSE

- Substance use among adolescents ranges from experimentation to severe substance use disorders.
- It puts adolescents at risk of ***short-term*** problems such as: accidents, fights, unwise or unwanted sexual activity, and overdose.
- Adolescents are also at increased risk of developing ***long-term*** consequences, such as mental health disorders, underachievement in school, and substance use disorder.

A. ALCOHOL USE

– Alcohol is the substance most often used by adolescents.

– ***Binge*** (more than 4 drinks within 2 hours or less) put adolescents at risk of accidents, injuries, unwise or unwanted sexual activity, and other unfortunate situations.

– Parents can make a difference by conveying clear expectations to their adolescent regarding drinking, setting limits consistently, and monitoring. On the other hand, adolescents whose family members drink excessively may think this behavior is acceptable.

– Risk factors for developing a disorder include starting drinking at a young age, and genetics.

B. TOBACCO USE

– Majority of adults who smoke cigarettes begin smoking during adolescence.

– The single strongest risk factor for adolescent smoking is having parents who smoke.

– Other risk factors often associated with starting smoking during childhood include:
  - Peers and role models (such as celebrities) who smoke
  - Poor school performance
  - Other high-risk behavior (excessive dieting – girls; fighting – boys; or use of other substances)
  - Poor problem-solving abilities
  - Availability of cigarettes
  - Poor self-esteem

– Parents can help prevent adolescent from smoking by being positive role models (not smoking), openly discussing tobacco hazards, encouraging who already smoke to quit, and supporting them in seeking medical assistance if necessary.

C. ELECTRONIC CIGARETTES (E-CIGARETTE / VAPE)

– E-cigarettes have been increasingly in popular, and mislabelled as safe alternatives to cigarettes.

– They contain vapor of heated liquid nicotine, which is the highly addictive part of tobacco.
– Nicotine is highly addictive, and nicotine toxicity is possible.

D. OTHER SUBSTANCES

1. **Prescription Drugs** that are particularly abused include:
   - Opioid (narcotic) pain relievers, antianxiety drugs, and stimulants (such as methylphenidate and similar drugs used for attention-deficit disorder).
   - Inhalants (aerosols)
2. **Nonprescription, Over-The-Counter (OTC) Drugs** that are particularly abused include cough and cold drugs that contain Dextromethorphan).
3. **Hallucinogens** (LSD, PCP, mescaline, mushrooms)
4. **Cocaine**
5. **Anabolic steroids** (oral or injectable)
   - Use of anabolic steroids (mostly athletes) is associated with a number of side effects, including premature closure of the growth plates at the ends of bones, resulting in permanent short stature.
6. **Methamphetamines** (poor man's Cocaine)
7. **Heroin**

Use of marijuana and synthetic cannabinoids is on the rise and recently surpassed tobacco use.

Behaviors that should prompt parents to discuss their concerns with child and doctor include:

- Erratic behavior
- Depression or mood swings
- A change in friends
- Declining school performance
- Loss of interest in hobbies

VI. ANOREXIA NERVOSA (AN)

- A form of self-starvation, an eating disorder that occurs in females between 16 and 18 years old.

Cause. Unknown

– Usually begins as innocent dieting behavior, but gradually progresses to extreme and unhealthy weight loss.
– Social attitudes toward body appearance, family influences, genetics and neurochemical and developmental factors are considered possible contributors to the cause of anorexia.
– Other mental health problems such as anxiety disorders or affective disorders are commonly found in teens with anorexia.

Signs and Symptoms

– Low body weight (less than 85 percent of normal weight for height and age).
– Intense fear of becoming obese, even as individual is losing weight.
– Distorted view of one's body weight, size, or shape; sees self as too fat, even when very underweight; expresses feeling fat, even when very thin.
– Refuses to maintain minimum normal body weight.
– In females, absence of three menstrual cycles without another cause.
– Excessive physical activity in order to promote weight loss.
– Denies feelings of hunger, preoccupation with food preparation, bizarre eating behaviors.
– May also be socially withdrawn, irritable, moody and depressed.
– The symptoms may resemble other medical problems or psychiatric conditions.

The following are the most common **physical symptoms** associated with anorexia:
– Dry skin that when pinched and released, stays pinched.
– Dehydration.

- Abdominal pain.
- Constipation.
- Lethargy.
- Dizziness.
- Fatigue.
- Intolerance to cold temperatures.
- Emaciation.

Diagnosis

- Detailed history of the child's behavior from parents and teachers.
- Psychological testing. Clinical observations of the child's behavior.

Treatment

Specific treatment for anorexia nervosa will be determined by the child's physician based on:
- Age, overall health and medical history.
- Extent of symptoms.
- Tolerance for specific medications or therapies.
- Expectations for the course of the condition.

Anorexia is usually treated with:
- Combination of individual therapy, family therapy, behavior modification and nutritional rehabilitation.
- Medication (antidepressants) may be helpful if the adolescent with anorexia is also depressed.

Complications

Medical complications that may result from anorexia include, but are not limited to, the following:

1. ***Cardiovascular***
   - Arrhythmias (a fast, slow or irregular heartbeat).
   - Bradycardia (slow heartbeat).
   - Hypotension (low blood pressure).
2. ***Hematological***
   - Mild Anemia (low RBC) in estimated one-third of anorexic patients.
   - Leukopenia (low WBC) occurs in up to 50 % of anorexic patients.
3. ***Gastrointestinal***
   - Normal intestinal tract movement slows down with very restricted eating and severe weight loss
4. ***Renal***
   - Dehydration often associated with anorexia results in highly concentrated urine.
   - Polyuria may also develop when the kidneys' ability to concentrate urine decreases.
5. ***Endocrine***
   - In females, amenorrhea (at least 3 consecutive months) is one of the hallmark symptoms.
   - Reduced levels of growth hormones are sometimes found and may explain growth retardation.
6. ***Skeletal***
   - Increased risk for skeletal fractures (broken bones).
   - When onset of anorexic symptoms occurs before peak bone formation (usually mid to late teens), greater risk of **osteopenia** (decreased bone tissue) or **osteoporosis** (bone loss) exists.

Prevention

- Preventive measures to reduce the incidence of anorexia are not known at this time.
- Early detection and intervention can reduce the severity of symptoms.

VII. OBESITY

CHILDHOOD OBESITY. Where excess body fat negatively affects child's health or well-being.

Being overweight increases a child's risk for a number of diseases and conditions, including:

1. **Asthma** – A large number of children who are overweight have asthma.
2. **Diabetes** – Type 2 diabetes, formerly known as adult onset diabetes, has become increasingly prevalent among overweight children and adolescents.
3. **Gallstones** – the incidence of gallstones is significantly higher in those who are obese.
4. **Liver Problems** – ***Non-Alcoholic Steatohepatitis*** (NASH), which can lead to cirrhosis.
5. **Heart Disease** – early indicators of **Atherosclerosis** (hardening of the arteries) begin as early as childhood/adolescence in children with risk factors. It is the most common cause of heart disease related to high cholesterol and triglyceride levels, associated with poor eating habits and overweight.
6. **High Blood Pressure** – Overweight children are more likely to have ↑ BP that can strain the heart.
7. **Menstrual Problems** – being overweight may cause a girl to reach puberty at an earlier age. Also, obesity may contribute to uterine fibroids or menstrual irregularities later in life.
8. **Trouble Sleeping** – ***Obstructive sleep apnea***. Serious, potentially life-threatening breathing disorder – brief interruptions of breathing during sleep. Long period – can lead to heart failure.

METABOLIC SYNDROME

- Abnormal lipids
- High blood pressure
- Insulin resistance
- Obesity

Health problems associated with metabolic syndrome respond well to diet and exercise. When children lose weight (even modest amounts), it can reverse the negative effects of metabolic syndrome.

OVERWEIGHT OF LIFE

- Overweight children and adolescents are more likely to become overweight or obese adults. It is an extremely difficult cycle to break. An unhealthy diet and a sedentary lifestyle are known risk factors for the three leading causes of death in adults: cancer, stroke and cardiovascular disease.
- Although there are treatment options for overweight children, prevention is the key to combating the childhood obesity epidemic.

VIII. BONE TUMORS

- A neoplastic growth of tissue in bone. Abnormal growths found in the bone.

A. BENIGN (noncancerous) – Typically stay in place and are unlikely to be fatal, may still require treatment. It can grow and could compress the healthy bone tissue and cause future problems.

Types

1. ***Osteochondroma***
   - Most common type, between 35 and 40 percent of all benign bone tumors.
   - Forms near the actively growing ends of the long bones in the arms (upper humerus) or leg bones (lower femur, upper and lower tibia).
   - Considered to be an abnormality of growth, made of bone and cartilage.
   - A child may develop a single osteochondroma or many of them.
2. ***Nonossifying fibroma unicameral***
   - A simple solitary bone cyst. It's the only true cyst of bone.
   - Usually found in the leg and occurs most often in children and adolescents.
3. ***Enchondroma***
   - A cartilage cyst that grows inside the bone marrow.
   - When occurs, begins in children and persists in adults.
   - Occurs in the hands and feet as well as the long bones of the arm and thigh.
4. ***Fibrous dysplasia***
   - A gene mutation that makes bones fibrous and vulnerable to fracture.

5. ***Aneurysmal bone cyst***
   - An abnormality of blood vessels that begins in the bone marrow.
   - Can grow rapidly and can be particularly destructive because it affects growth plates.
6. ***Giant cell tumor***
   - Grows aggressively, occur in adults, very rare.
   - Found in the rounded end of the bone and not in the growth plate.

B. MALIGNANT (cancerous). Can cause cancer to spread throughout the body.

Primary Bone Cancer – Cancer originated in the bones. According to National Cancer Institute (NCI), it accounts for <1% of all types of cancer. The 3 most common forms of primary bone cancers are:

1. ***Osteosarcoma***
   - Occurs mostly in children and adolescents, the second most common type of bone cancer.
   - Usually develops around the hip, shoulder, or knee.
   - Grows rapidly and tends to spread to other parts of the body.
2. ***Ewing sarcoma family of tumors (ESFTs)***
   - Most commonly occurs between ages 5 and 20.
   - Most common locations are the upper and lower leg, pelvis, upper arm and ribs.
3. ***Chondrosarcoma***
   - More likely to develop in middle-aged people and older adults than other age groups.
   - This type of bone cancer usually develops in the hips, shoulders, and pelvis.

IX. AMENORRHEA

- Absence of a menstrual period in a woman of reproductive age.
- ***Physiological*** states of amenorrhea are seen, most commonly, during pregnancy and lactation.
- Outside the reproductive years, there is absence of menses during childhood and after menopause.

Types

Primary Amenorrhea. Absence of menstruation in a woman by the age of 16.

– As pubertal changes precede the ***Menarche*** (first period), or female children by the age of 14 who still have not reached menarche, plus having no sign of secondary sexual characteristics, such as ***Thelarche*** (beginning of breast development) or ***Pubarche*** (first appearance of pubic hair) – thus are without evidence of initiation of puberty – are also considered as having primary amenorrhea.

Secondary Amenorrhea is where an established menstruation has ceased for 3 months in a woman with a history of regular cyclic bleeding, or 6 months in a woman with a history of irregular periods.

– Usually happens to women aged 40–55. However, adolescent athletes are more likely to experience disturbances to the menstrual cycle than athletes of any other age.

– Amenorrhea may cause serious pain in the back near the pelvis and spine. This pain has no cure, but can be relieved by a short course of progesterone to trigger menstrual bleeding.

Causes

1. **Low Body Weight**
   - Girls with anorexia or bulimia may have amenorrhea if their body weight is too low.
2. **Physical activity / Stress**
   - ***Functional Hypothalamic*** (or 'athletic') ***Amenorrhea*** (FHA) can be caused by stress and/or excessive exercise, although normal menses usually return with healthy body weight.
3. **Drug-Induced**
   - Patients who use and then cease using contraceptives like the Combined Oral Contraceptive Pill (COCP) may experience secondary amenorrhea as a withdrawal symptom.
   - Opiates (heroin), on regular basis has also been known to cause amenorrhea in longer term users.
   - Anti-psychotic drugs used to treat schizophrenia have been known to cause amenorrhea as well.
4. **Breastfeeding**

- Breastfeeding typically lasts longer than lactational amenorrhea, the duration of amenorrhea varies depending on how often a woman breastfeeds.
- Lactational amenorrhea has been advocated as a method of family planning. It is 98% percent effective as a method of preventing pregnancy in the first six months postpartum.

5. **Physical problem**
   - ***Pituitary adenoma*.** This is a tumor that grows in the brain. It may cause problems with the normal function of hormones. This can prevent ovulation and cause missed periods.
   - ***MRKH*** (Mayer–Rokitansky–Küster–Hauser) syndrome, the second-most common cause of primary amenorrhea. In MRKH Syndrome, the Müllerian ducts develop abnormally and can result in vaginal obstructions preventing menstruation. The syndrome develops prenatally early in the development of the female reproductive system.

Diagnosis

– **Blood tests.** These look at hormone levels and check for pregnancy.
– **Pelvic ultrasound.** It can show physical problems of the reproductive system.
– The healthcare provider may also need to look for other menstrual disorders, health problems, or medicines that may be causing or making the condition worse.

Treatment

Depends on child's symptoms, age, and general health; and the cause and how severe the condition is.
– Hormone treatment with progesterone
– Hormone treatment with birth control pills (oral contraceptives)
– Medicine to treat thyroid disorder
– Surgery for birth defects or other physical problems
– Changes in diet or exercise
– Treatment of an eating disorder
– Calcium supplements to reduce bone loss (osteoporosis)

Complications

– **Thinning bones.** Amenorrhea caused by low estrogen can lead to osteoporosis.
– **Infertility.** Amenorrhea caused by lack of ovulation means pregnancy may be difficult or not possible in the future.

X. DYSMENORRHEA

- **Painful Periods** or **Menstrual Cramps,** are severe, painful cramps that occur with menstruation.

Types / Causes

Primary Dysmenorrhea
– Occurs without an associated underlying condition.
– Starts soon after the first menstrual period. Usually lifelong, but it may get better over time.

Secondary Dysmenorrhea
– Has a specific underlying cause, typically a condition that affects the uterus or other reproductive organs, such as a growth or infection. It usually starts later.
– The most common cause of secondary dysmenorrhea is endometritis, which can be visually confirmed by laparoscopy in approximately 70% of adolescents with dysmenorrhea.

Signs and Symptoms

– Main symptom is **pain,** concentrated in the lower abdomen (right or left side) or pelvis, may radiate to the thighs and lower back.
– ***Symptoms*** often co-occurring with menstrual pain include: nausea and vomiting, diarrhea, dizziness, disorientation, fainting, and fatigue.
– Symptoms often begin immediately after ovulation and can last until end of menstruation. Because dysmenorrhea is often associated with changes in hormonal levels that occur with ovulation.

– **Prostaglandin** induce abdominal contractions that can cause pain and gastrointestinal symptoms.

Diagnosis

– Usually made simply on a **Medical History** of menstrual pain that interferes with daily activities.
– Further work-up includes a specific **medical history of symptoms** and **menstrual cycles**, and a **pelvic examination**.
– Based on results from these, additional exams and tests may be motivated, such as:
  - Gynecologic Ultrasonography
  - Laparoscopy.

Management

1. ***Nonsteroidal Anti-Inflammatory Drugs*** (NSAIDs) such as Ibuprofen, Naproxen, are effective in relieving the pain of primary dysmenorrhea. They can have side effects of nausea, dyspepsia, peptic ulcer, and diarrhea.
2. ***Hormonal birth control***
   - May improve symptoms of primary dysmenorrhea.
   - Norplant and Depo-provera are also effective, since these methods often induce amenorrhea.
   - The intrauterine system (Mirena IUD with progesterone) may be useful in reducing symptoms.
3. ***Transcutaneous Electrical Nerve Stimulation*** (TENS). High-frequency TENS may reduce pain compared with sham TENS, but seems to be less effective than Ibuprofen.
   - TENS is effective in reducing pain, decreasing the use of analgesics, and improving the quality of life in primary dysmenorrhea patients.
4. ***Surgery.*** One treatment of last resort is presacral neurectomy.

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