



Sokrates



Euro-Projektserver s.r.o.



Europäisches Bildungswerk für
Beruf und Gesellschaft gGmbH

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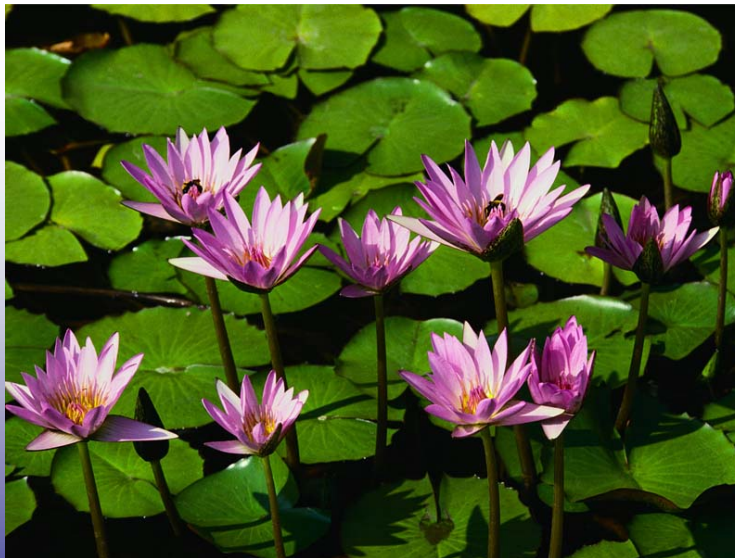


Welcome to *proHealth*

*- Protecting and Prevention of Health by awareness-rising
and information -*

Modul 1 - part II

Respiratory system



Source: from Aid and DGE, CD

Respiratory system

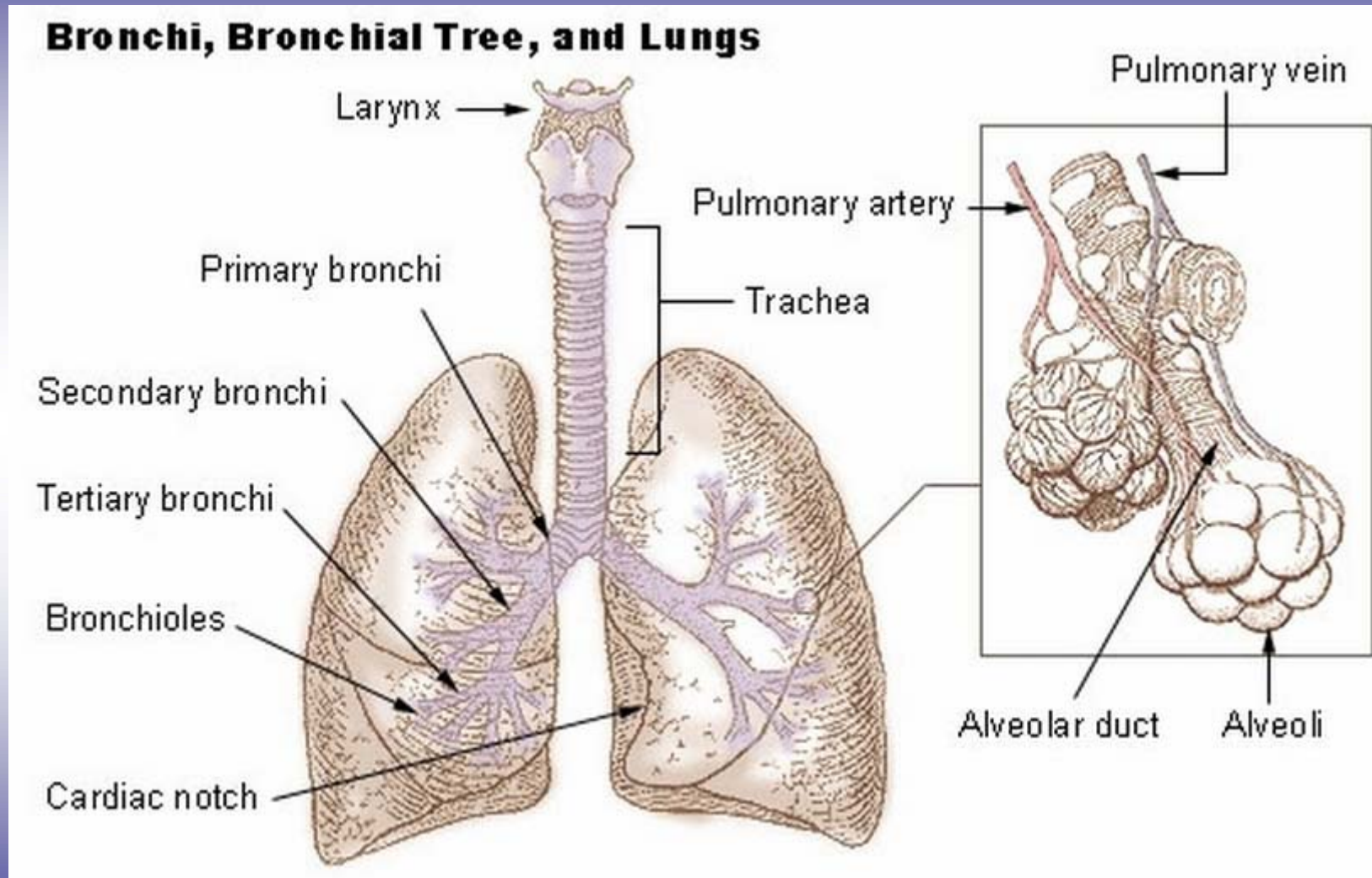
Asthma bronchiale

Medical basic info's

Anatomy of the normal respiratory system:

Air enters lungs through two large air passages (bronchi), one for each lung, within each lung divided into smaller and smaller air tubes (bronchioles) like branches of tree. Inhaled air is brought through these airways to millions of tiny sacs (alveoli) contained in the lungs. O_2 passes from air sacs into blood stream, body waste product CO_2 returned to the air sacs and eliminated upon each exhalation.

Asthma bronchiale Medical basic info's



Respiratory system

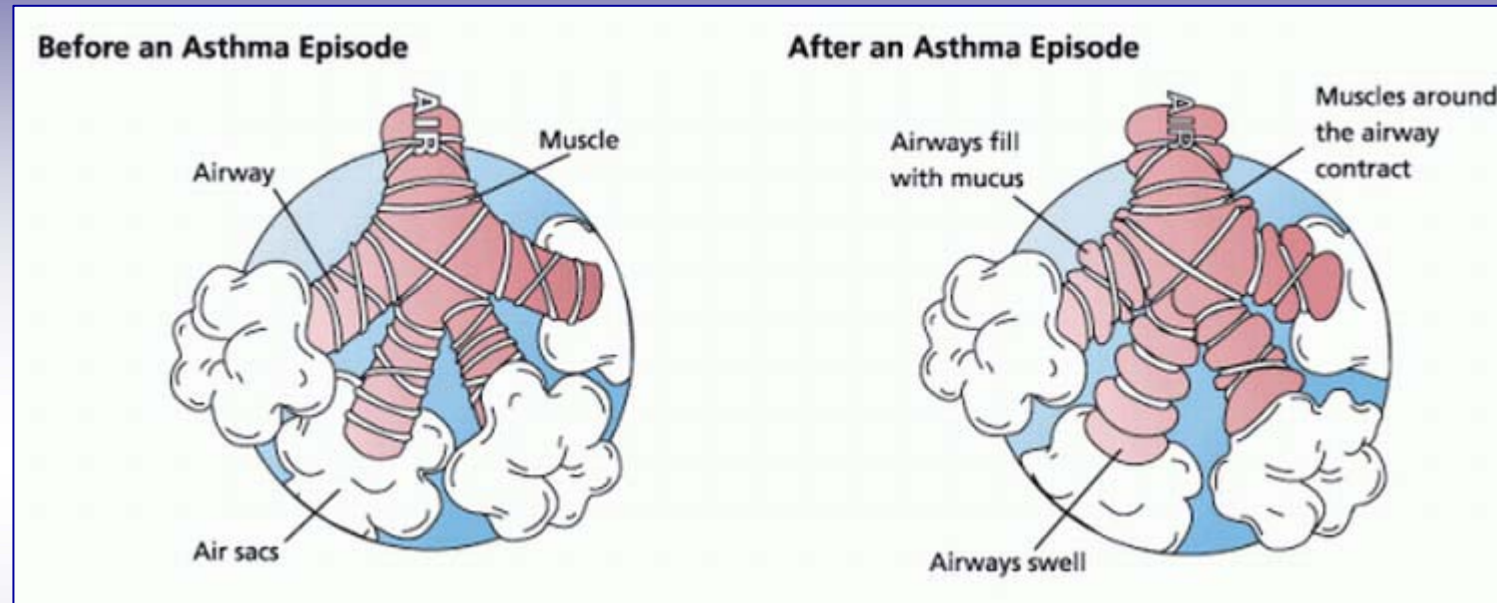
Asthma bronchiale

Medical basic info's

Definition:

chronic inflammation of bronchial airways
causing swelling and constriction, leading to
difficult breathing

Asthma bronchiale Medical basic info's



Inflamed airways and bronchoconstriction in asthma.

Airways narrowed as a result of the inflammatory response cause wheezing.

Respiratory system

Asthma bronchiale

Medical basic info's

Prevalence:

Most common chronic illness in children, affecting 1 in every 15. Bronchial asthma occurs at all ages but predominantly in early life: one-half develop before age 10, and another third occur before age 40.

Respiratory system

Asthma bronchiale Medical basic info's

Two broad groups:

- **Allergic asthma:** often associated with personal or family history of allergic diseases such as rhinitis, urticaria, and eczema with positive skin reactions to intradermal injection of extracts of antigens; increased IgE in the serum; and/or positive response to provocation tests involving the inhalation of specific antigen.
- **Idiosyncratic:** when negative histories of allergy, negative skin test and normal serum levels of IgE

Respiratory system

Asthma bronchiale Medical basic info's

Nearly 80% of children and 50% of adults with asthma also have allergies.

Allergens: seasonal pollens; year-round dust mites, molds, pets, and insect parts; foods, as fish, eggs, peanuts, nuts, cow's milk, and soy; additives, like sulfites; work-related agents, like chemicals, solvents, plastics, and latex.

Respiratory system

Asthma bronchiale Medical basic info's

Irritants I:

environmental like: atmospheric pollutants and antigens, smog, tobacco smoke

occupational like: chemicals, dusts, gas, and metals

infectious: respiratory infections most common to evoke

exercise: done in cold dry conditions provoking attack of asthma.

Respiratory system

Asthma bronchiale

Medical basic info's

Irritants II:

emotional stress like: psychological factors can interact with the asthmatic diathesis to worsen or ameliorate the disease process, like laughing, crying, yelling, and distress)

hormonal factors like as in premenstrual syndrome

drugs (aspirin, other NSAID, beta blockers)

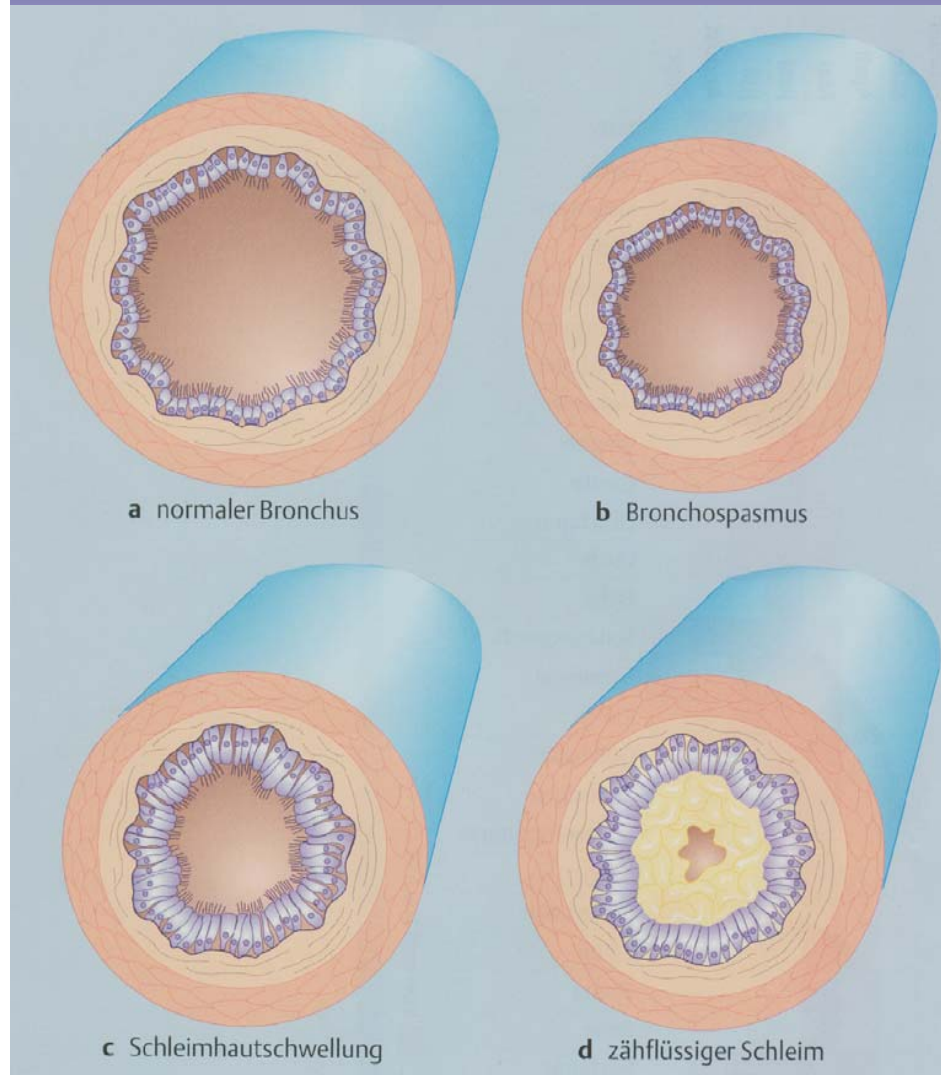
Respiratory system

Asthma bronchiale Medical basic info's

Affect of breathing while asthma:

Asthma involves only the bronchial tubes and does not affect the air sacs or the lung tissues. The narrowing that occurs in asthma is caused by three major factors:

Affect of breathing while asthma



1.

Inflammation occurs in response to an allergen or irritant and results from the action of chemical mediators which results in the production of an excess amount of sticky mucus into the tubes. The mucus clumps together and forms plugs which clog the smaller airways.

Respiratory system

Asthma bronchiale

Medical basic info's

Affect of breathing while asthma:

2. Bronchospasm, caused by chemical mediators or nervs in the bronchial tubes, is the muscle constriction of the airways.

Respiratory system

Asthma bronchiale Medical basic info's

Affect of breathing while asthma:

3. Hyperreactivity/Hypersensitivity: chronically inflamed and constricted airways become highly sensitive to triggers such as allergens, irritants and infections. Exposition to the triggers results in progressively more inflammation and narrowing.

Respiratory system

Asthma bronchiale Medical basic info's

Problems by asthma:


A normal response of the body to injury or infection is inflammation or swelling as a part of the healing process. The inflammation subsides when the healing is over. However, in asthma inflammation does not resolve completely. In the short term, it results in recurrent attacks of asthma.

Respiratory system

Asthma bronchiale

Medical basic info's

The asthma ↻ “circulus vitiosus” has to be avoided !!!

 **TRIGGER** α Asthma α Inflammation α Bronchial hyperreactivity α Airways remodeling α Asthma α Inflammation α Bronchial hyperreactivity α Airways remodeling α

Respiratory system

Asthma bronchiale Medical basic info's

Diagnosis by clinical presentation

4 major recognized symptoms:

- shortness of breath (with exertion or at night)
- wheezing (whistling or hissing sound while breathing out)
- coughing (chronic, worse at night and early morning)
- chest tightness (together or without above symptoms).

Respiratory system

Asthma bronchiale Medical basic info's

Diagnosis by clinical presentation :

- 30% of affected patients have mild, intermittent (< than 2 episodes /week) symptoms of asthma with normal breathing tests.
- 30% have mild, persistent (2 or more episodes/week) symptoms with normal breathing tests.
- 40% have moderate or severe, persistent (daily/continuous) symptoms with abnormal breathing tests.

Respiratory system

Asthma bronchiale

Medical basic info's

Drug treatment:

- Beta 2-agonists
- Methylxanthins
- Glucocorticoids
- adrenergic stimulans

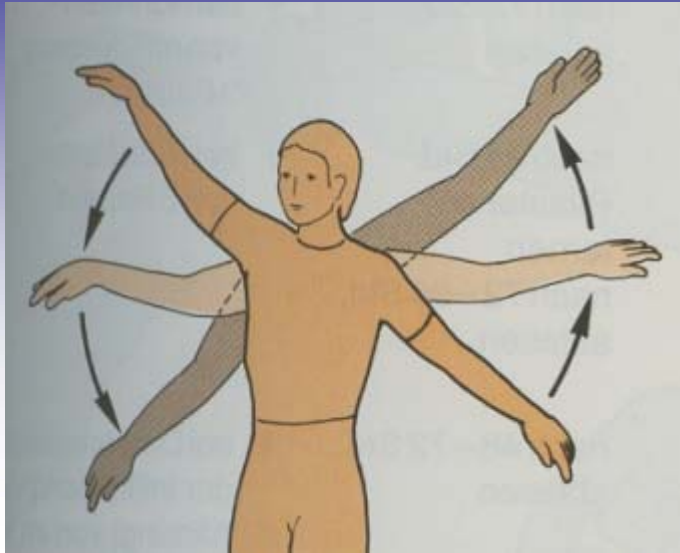
Respiratory system

Physical movement and asthma bronchiale



Grafic from: Aid and DGE, CD

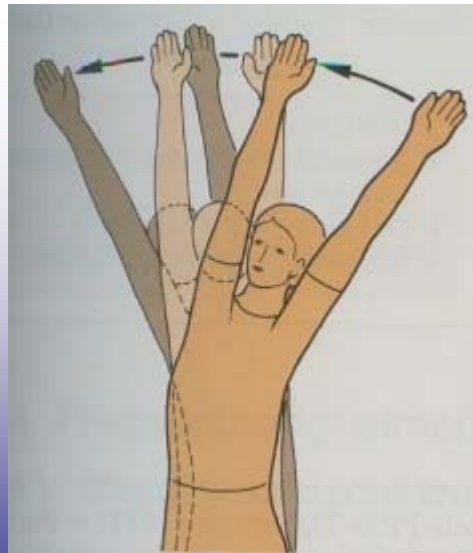
Respiratory system



Loosening-up exercise

all exercise possible sedentary or upright

arms fluffily swing – partial and alternating



with both arms parallel forward and backward swing

with arms circulate, partial and alternating, and parallel

Respiratory system

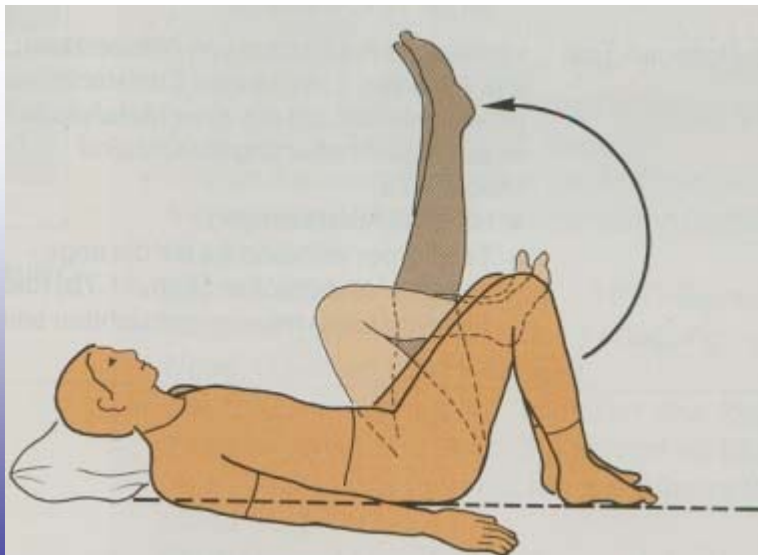


Exercise for invigoration

- sedentary

„cycling“

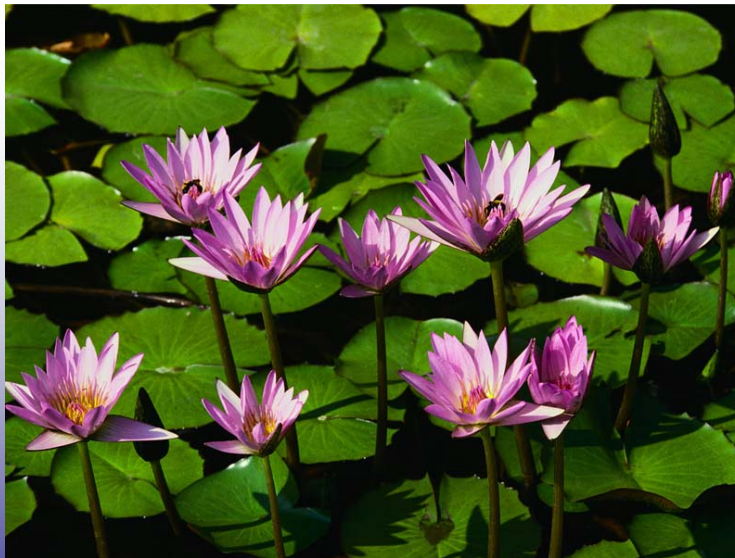
Knees heave alternating or parallel towards shoulder. Meanwhile grab hold of stool with both hands.



- horizontal

Tuck up one's legs. Knees alternating oder together towards shoulder or legs angle and alternating or together uplift. „cycling“

Digestion



Source: from Aid and DGE, CD

Digestion

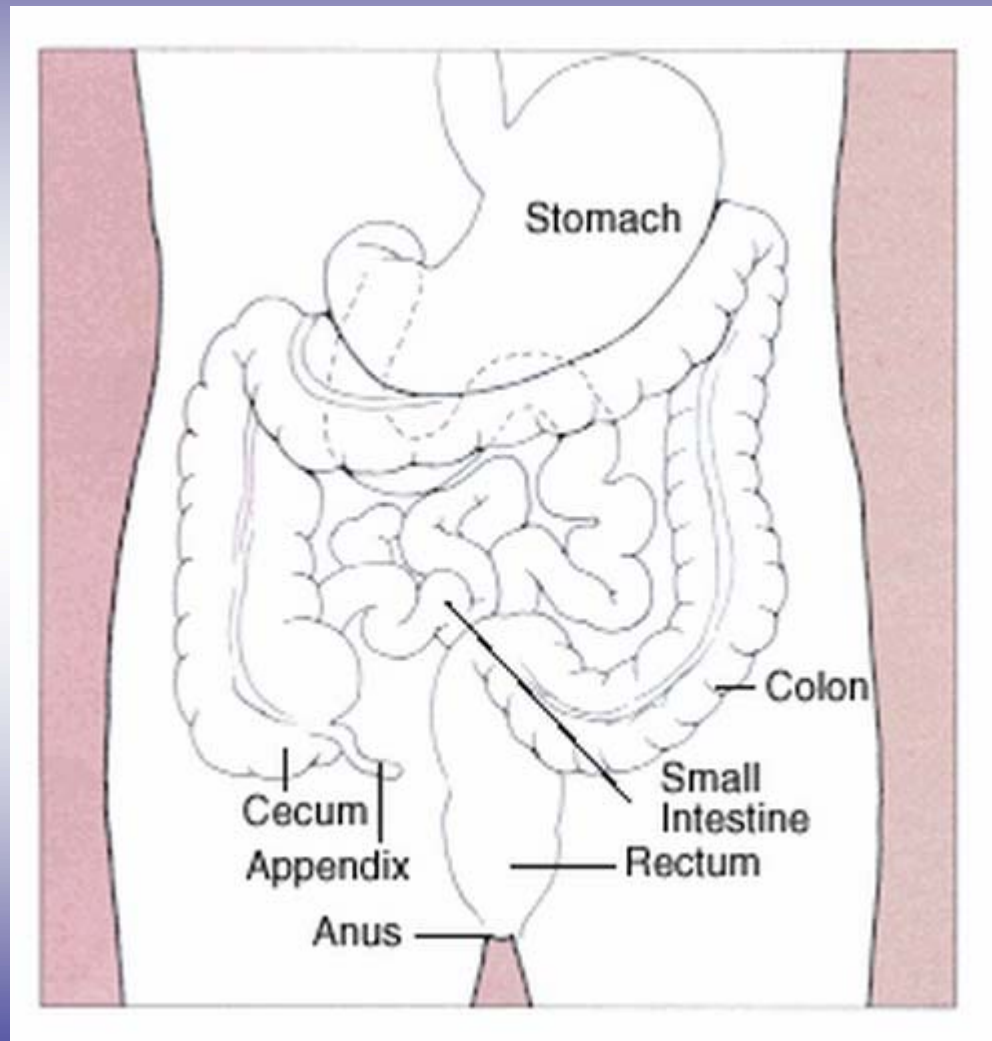


Diagram of the human gastrointestinal tract.

Irritable Bowel Syndrome (IBS)

Medical basic info's

Clinical presentation:

IBS is a common gastrointestinal disorder involving abnormal gut contractions (motility) characterized by abdominal pain, bloating, mucous in stools, and irregular bowel habits with alternating diarrhea and constipation, symptoms that tend to be chronic and to wax and wane over the years.

Digestion

Irritable Bowel Syndrome (IBS)

Medical basic info's

Diagnosis:

IBS can be diagnosed based on at least 12 weeks, which need not be consecutive, of the preceding 12 months there was abdominal discomfort or pain that had two out of three of these features:

- relieved with defecation; and/or
- onset associated with a change in frequency of stool; and/or
- onset associated with a change in form (appearance) of stool.

Digestion

Irritable Bowel Syndrome (IBS)

Medical basic info's

Symptoms:

- nausea
- vomiting
- abdominal bloating (sensation of abdominal fullness)
- abdominal distension (enlargement).

On the other hand symptom of rapid transportation is diarrhea.

Irritable Bowel Syndrome (IBS)

Medical basic info's

Primary symptoms:

- constipation (caused by abnormally slowed transportation in the colon)
- diarrhea (caused by rapid transportation)
- abdominal pain.

Irritable Bowel Syndrome (IBS)

Medical basic info's

Secondary symptoms:

- abnormal passage of stool
- abnormal form of stool
- increased amounts of mucus in the stool
- a subjective feeling of abdominal distention (bloating).

Irritable Bowel Syndrome (IBS)

Medical basic info's

Causes of IBS I:

- either the muscles of the organs or the controlling nerves are not working normally which results in an abnormal function
- abnormal input from intestinal sensory nerves
- abnormal processing of input from the sensory nerves
- abnormal stimulation of the intestines by the motor nerves.

Irritable Bowel Syndrome (IBS)

Medical basic info's

Causes of IBS II:

Two of the most common motor responses in the intestine are contraction or relaxation of the muscle of the organ and secretion of fluid and/or mucus into the organ. Poor digestion or absorption of lactose could aggravate the symptoms of IBS since unabsorbed sugars often lead to increased formation of gas.

Irritable Bowel Syndrome (IBS)

Medical basic info's

Treatment:

1. medications to control **constipation, diarrhoea, and abdominal pain.**
2. anti-depressant medication and psychological treatments also may be used
3. It is not clear if dietary alterations have much effect on the symptoms of IBS except for increases in dietary fiber, which may improve constipation.

Constipation and IBS

Medical basic info's

Constipation:

...is a condition of the digestive system where a person experiences hard feces that are difficult to egest; it may be extremely painful, and in severe cases (*fecal impaction*) lead to symptoms of bowel obstruction.

Digestion

Constipation and IBS

Medical basic info's

Medication:

- serotonin to control of contractions (a chemical manufactured by nerves in the intestine, and it allows nerves to communicate with each other).
- serotonin can either promote or prevent contractions of intestinal muscles.
- using receptor blocker results in increasing contractions of the intestinal muscles and speed the transit of digesting food.

Diarrhoea and IBS

Medical basic info's

Diarrhoea:

...is an increase in the frequency of bowel movements, and in the looseness of stool or both.

Diarrhoea and IBS

Medical basic info's

Medication:

- loperamide which slows down the contractions of the muscles of the small intestine and colon.

Abdominal pain and IBS

Medical basic info's

Abdominal pain:

...can be one of the symptoms associated with transient disorders or serious disease. Making a definitive diagnosis of the cause of abdominal pain can be difficult, because many diseases can result in this symptom.

Abdominal pain and IBS

Medical basic info's

Medication:

- smooth-muscle relaxants, they only reduce strength of contraction of the smooth muscles but do not affect other types of muscles.

Psyche and IBS

Medical basic info's

Patients with IBS are frequently found to be suffering from depression, but it is unclear if depression causes IBS or results in IBS, or is unrelated to IBS.

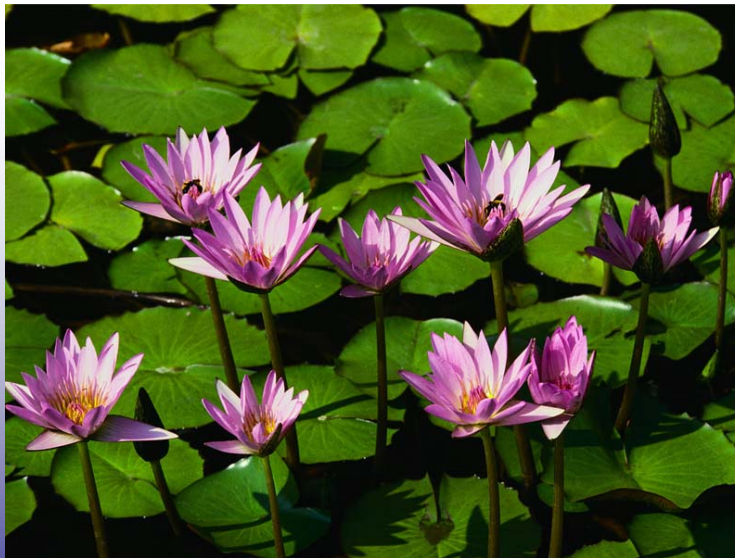
Psyche and IBS

Medical basic info's

Psychological drugs and treatment:

Few Studies have shown that psychological treatments can reduce anxiety and other psychological symptoms in addition to reducing IBS symptoms, particularly pain and diarrhoea.

Digestion



Source: from Aid and DGE, CD

CROHN'S DISEASE and ULCERATIVE COLITIS

Medical basic info's

Crohn's disease and **ulcerative colitis** are frequently referred to as inflammatory bowel disease (IBD).

Periods of remission (inactivity) and relapse (activity), changes after the disease begins.

Digestion

CROHN'S DISEASE and ULCERATIVE COLITIS

Medical basic info's

Prevalence and etiology:

Approximately 500000 to 2 million people are affected, men and women equally.

IBD commonly begins during adolescence and early adulthood, but also in childhood and later in life possible.

Digestion

CROHN'S DISEASE and ULCERATIVE COLITIS

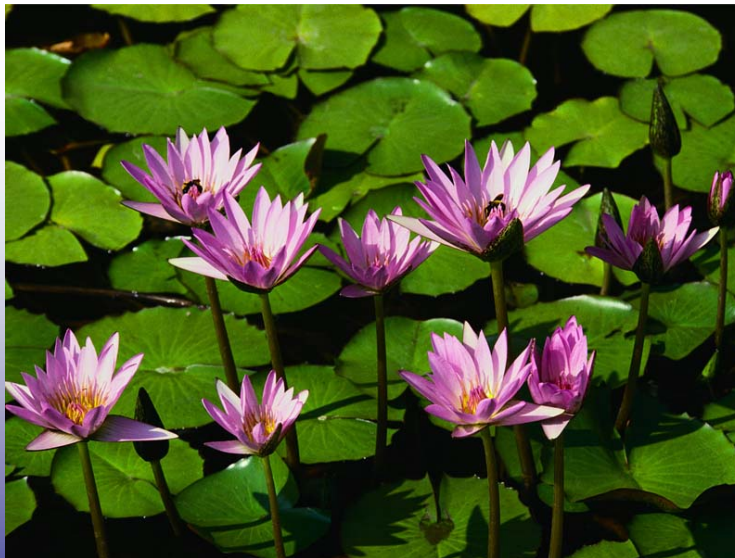
Medical basic info's

Cause is unknown, but...

...it is suspected that infection by certain bacteria, such as strains of mycobacterium, may be the cause, however no convincing evidence to this hypothesis.

It is not contagious!!

Digestion



Source: from Aid and DGE, CD

CROHN'S DISEASE

Medical basic info's

Clinical presentation:

Crohn's disease is a chronic inflammatory disease of the intestines. It primarily causes ulcerations (breaks in the lining) of the small and large intestines, but can affect the digestive system anywhere from the mouth to the anus.

CROHN'S DISEASE

Medical basic info's

Possible formations of a channel (fistula) between the intestine and adjacent organs are with:

- Bladder: causing frequent urinary tract infections and passage of gas and feces during urination.
- Skin: pus and mucous emerges from a small painful opening on the skin of the abdomen .
- Vagina: gas and feces emerge from the vagina;
- Anus: discharge of mucous and pus from the fistula's opening around the anus.

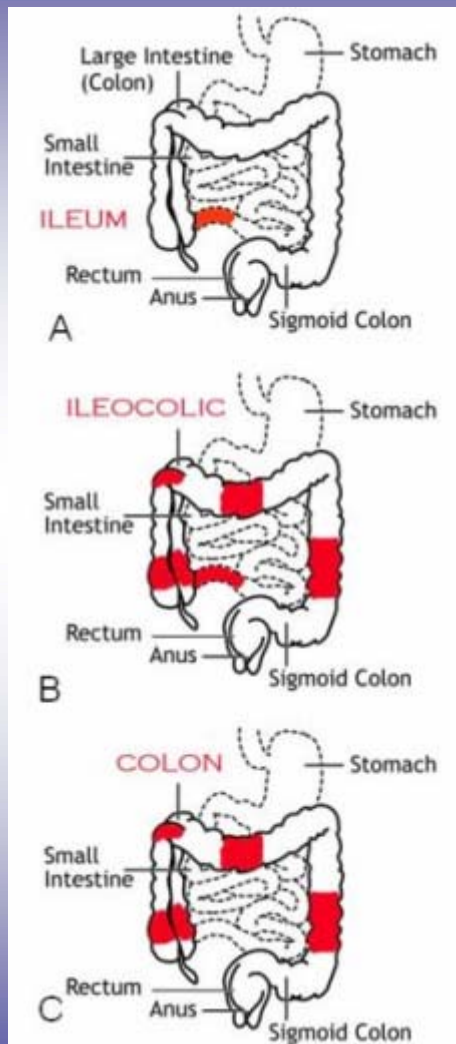
CROHN'S DISEASE

Medical basic info's

Symptoms:

- most common symptoms are:
abdominal pain, diarrhoea, and weight loss
- less common symptoms are:
poor appetite, fever, night sweats, rectal pain, and rectal bleeding.

Digestion



CROHN'S DISEASE

The three most common sites of intestinal involvement in Crohn's disease are ileal, ileocolic and colonic.

CROHN'S DISEASE

Medical basic info's

Different subtypes and their symptoms I:

- Crohn's colitis with inflammation of the colon presence abdominal pain and bloody diarrhoea. Anal fistulae and perirectal abscesses can also occur.
- Crohn's enteritis with inflammation of the small intestine presence abdominal pain and diarrhoea, even obstruction of small intestine is possible.

CROHN'S DISEASE

Medical basic info's

Different subtypes and their symptoms II:

- Crohn's terminal ileitis with inflammation of the very end of the small intestine (terminal ileum, closest part to the colon) presence abdominal pain and diarrhoea and also obstruction of the small intestine is possible.
- Crohn's entero-colitis and ileo-colitis with inflammation in both the small intestine and the colon presence bloody diarrhoea and abdominal pain, and also obstruction is possible.

CROHN'S DISEASE

Medical basic info's

Different subtypes and their symptoms III:

- Crohn's terminal ileitis and ileo-colitis are the most common types of Crohn's disease.

CROHN'S DISEASE

Medical basic info's

Treatment:

Periods of relapse followed by periods of remission and lasting months and years is typically for Crohn's disease, because there is **no medication to cure it**, yet.

CROHN'S DISEASE

Medical basic info's

Treatment:

Abdominal pain, diarrhea, and rectal bleeding are worsen during relapse, and getting better during period of remission. Because of no possibility to cure the disease the goals of the treatment are inducing remission, maintaining remission, minimising side effects, and improving quality of life.

CROHN'S DISEASE

Medical basic info's

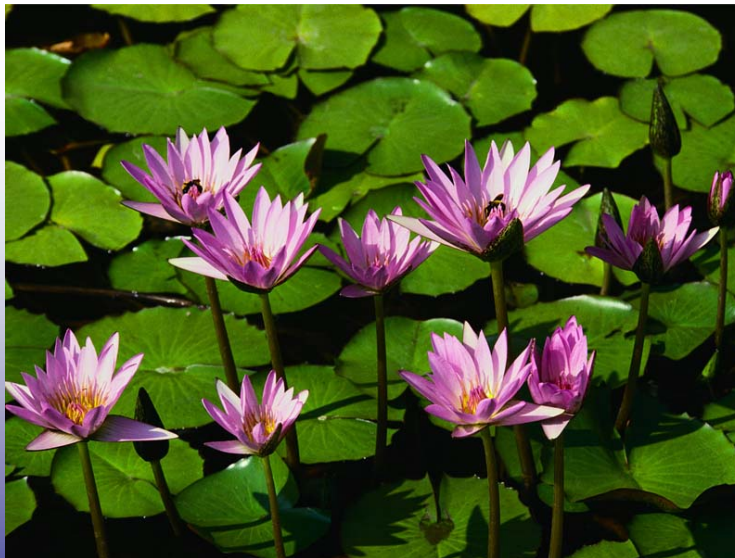
Medication:

Anti-inflammatory medications like:

- sulfasalazine
- corticosteroids
- antibiotic

Immuno-modulators and other medications

Digestion



Source: from Aid and DGE, CD

Ulcerative Colitis

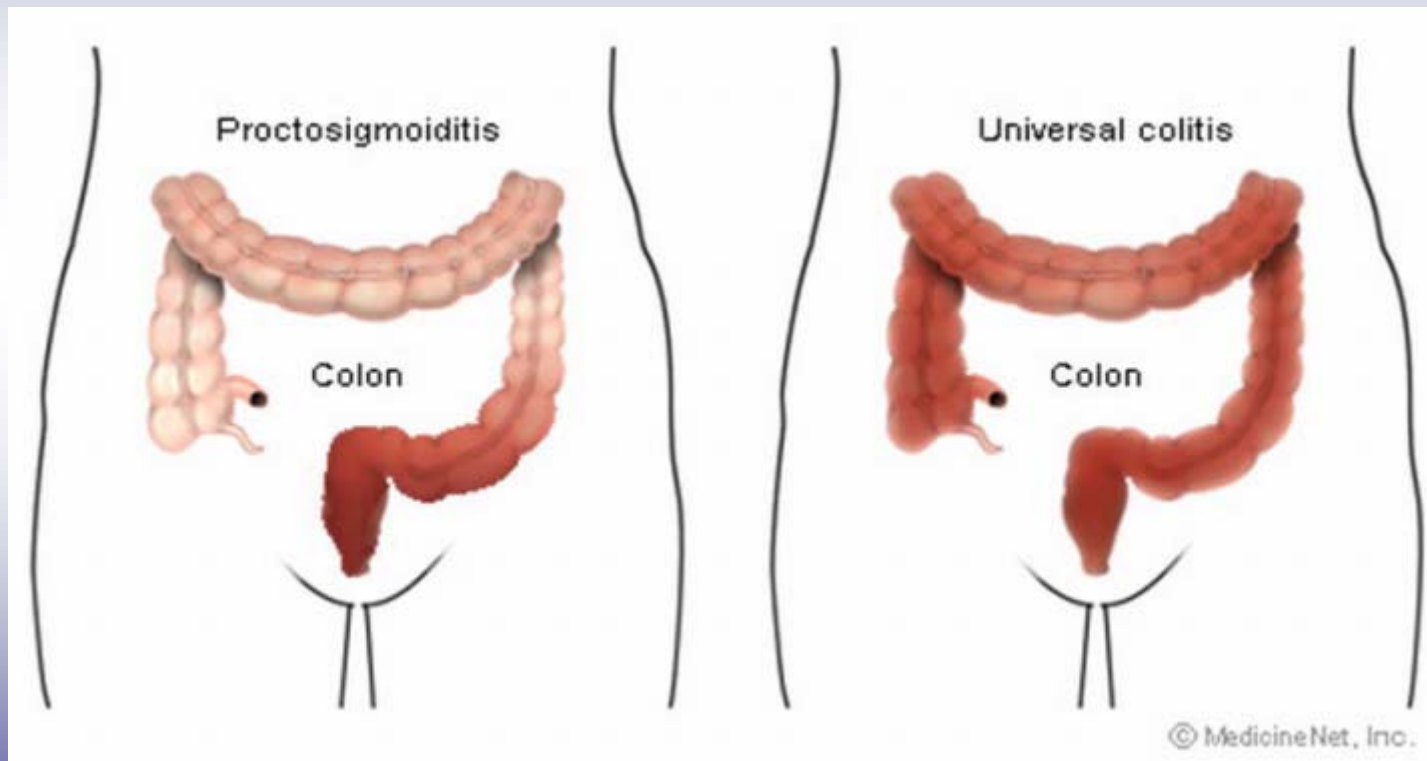
Medical basic info's

Clinical presentation:

Ulcerative colitis is a chronic inflammation of the large intestine (colon). The colon is the part of the digestive system where waste material is stored. The rectum is the end of the colon adjacent to the anus. In patients with ulcerative colitis, ulcers and inflammation of the inner lining of the colon lead to symptoms of abdominal pain, diarrhea, and rectal bleeding.

Ulcerative Colitis

Medical basic info's



Ulcerative Colitis

Medical basic info's

Location and the extent of inflammation I:

- ulcerative proctitis: limited to the rectum with mild intermittent rectal bleeding as only symptom;
- proctosigmoiditis: limited to the rectum and the sigmoid colon with rectal bleeding, urgency, and tenesmus, and some also developing bloody diarrhoea and cramps;
- left-sided colitis: limited to the rectum and extended up the left colon with bloody diarrhoea, abdominal cramps, weight loss, and left-sided abdominal cramp;

Ulcerative Colitis

Medical basic info's

Location and the extent of inflammation II:

- pan colitis : inflammation affecting the entire including symptoms of bloody diarrhoea, abdominal pain and cramp, weight loss, fatigue, fever, and night sweats;
- fulminant colitis: rare but severe form of pan colitis including symptoms of extremely dehydration, severe abdominal pain, protracted diarrhoea with bleeding, and even shock. The risk of developing toxic mega colon and colon rupture has to be considered, to prevent colon rupture surgical removal of the diseased colon is necessary.

Ulcerative Colitis

Medical basic info's

Treatment:

Periods of relapse followed by periods of remission and lasting months and years is typically for Crohn's disease, because there is **no medication to cure it**, yet.

Ulcerative Colitis

Medical basic info's

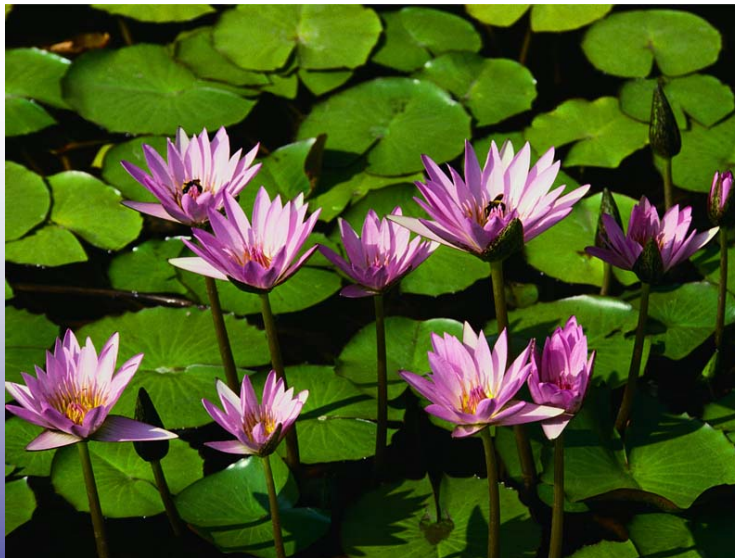
Medication:

Anti-inflammatory medications like:

- sulfasalazine
- corticosteroids
- antibiotic

Immuno-modulators and other medications

Cancer



Source: from Aid and DGE, CD

Cancer

Medical basic info's

Cancer,

in medicine, common term for neoplasms, or tumors, that are malignants. Like benign tumors, malignant tumors do not respond to body mechanisms that limit cell growth. Unlike benign tumors, malignant tumors consist of undifferentiated, or unspecialized, cells that show an atypical cell structure and do not function like the normal cells from the organ from which they derive.

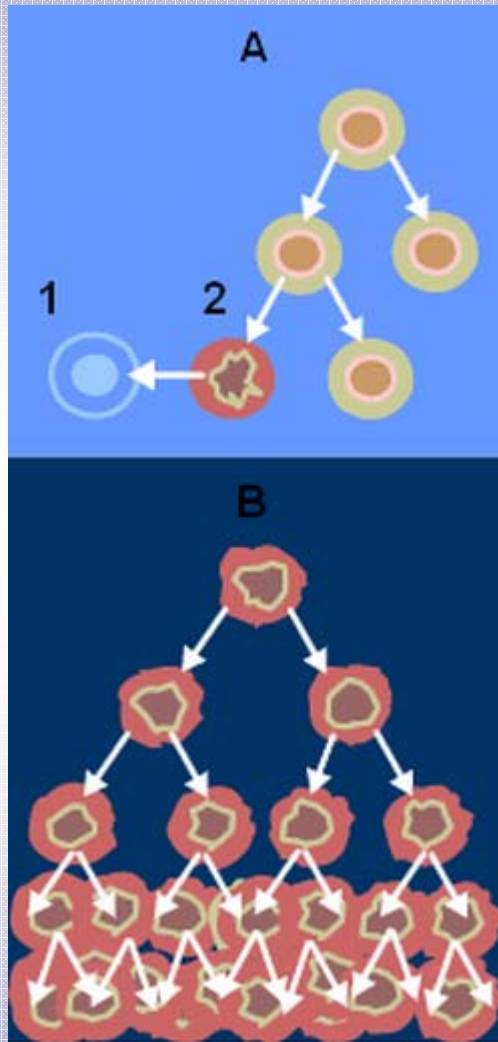
Cancer

Medical basic info's

Two other characteristics of cancer cells:

1. invasiveness of surrounding tissues, and metastasis
2. or spreading via the lymph system or blood to other tissues and organs.

Cancer



(A) When normal cells are damaged beyond repair, they are eliminated by Apoptosis.

(B) Cancer cells avoid apoptosis and continue to multiply in an unregulated manner.

Cancer

Medical basic info's

Classic symptoms I:

- rapid weight loss
- a change in a wart or mole
- a sore that does not heal
- difficulty swallowing
- chronic hoarseness
- blood in phlegm, urine, or stool (a consequence of angiogenesis); chronic abdominal pain

Cancer

Medical basic info's

Classic symptoms II:

- a change in size or shape of the testes;
- a change in bowel habits;
- a lump in the breast;
- and unusual vaginal bleeding.

Cancer

Medical basic info's

Nonspecific symptoms:

- weakness
- loss of appetite, and weight loss
- and thus are not obvious in the early stages.

Cancer

Medical basic info's

Causes I:

Cancer results from mutations of certain genes that allow the cells to begin their uncontrolled growth.

Triggers:

Cigarette smoke or ultraviolet rays, referred to as carcinogens.

Cancer

Medical basic info's

Causes II:

There is usually a latency period of years or decades between exposure to a carcinogen and the appearance of cancer. This, combined with the individual nature of susceptibility to cancer, makes it very difficult to establish a cause for many cancers.

Cancer

Medical basic info's

Prevention I:

- cessation of smoking and other tobacco use
- a diet low in fat and high in fiber, including a variety of fruits and vegetables (especially those high in antioxidants),
- effective protection against the rays of the sun

Cancer

Medical basic info's

Prevention II:

- vaccination against cancer-causing viruses (hepatitis B)
- preventiv medical checkup
- self-examination

Cancers caught early, before metastasis, have the best cure rates!

**THANK YOU FOR YOUR
ATTENTION!**