



# اولین دوره بین المللی فیتنس در ایران

۱۶ لغایت ۲۰ فروردین  
6-10 APRIL



# *Health restrictions and physical activity*

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## *HEALTH AND DISEASE*

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HEALTH is a state full of physical, mental and social well-being

ILLNESS is a condition where adaptation mechanisms fail

The role is also played by:

- DISPOSITION
- IMMUNITY



# *RISK FACTORS OF CIVILIZATION DISEASES*

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## **INTERNAL**

- genetic burden
- genetically determined level of immunity

## **EXTERNAL**

- lifestyle factors and way of life (unhealthy nutrition, low physical activity, excessive stress, addictive substance, ...)
- environment
- health care



# *HEALTH GROUPS*

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- I. individuals healthy and trained
- II. individuals health
- III. individuals weakened
- IV. sick individuals



## *EXAMINATION BY A DOCTOR*

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- it is always necessary
- we perform input and continuous testing

### **EACH INSTRUCTOR IS OBLIGED TO:**

- respect diagnostic data
- record them
- compare changes in collaboration with the doctor



## *HEALTH WEAKNESS*

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- musculoskeletal system
- cardiovascular
- metabolic defects
- nervous and neuropsychic
- sensory weakness
- digestive system
- respiratory system
- weakness of seniors
- gynaecology weakness



# *ANAMNESIS*

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It is a part of the new client's diagnostics

- We start the investigation by asking about the diseases that the parents and siblings of the sick and the sick himself survived
- family
- personal
- current disease



# *CARDIOVASCULAR SYSTEM AND ITS WEAKNESS*

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## **CARDIOVASCULAR SYSTEM**

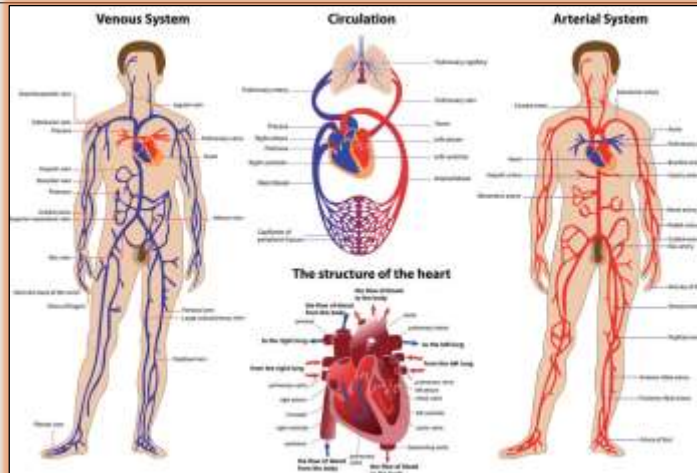
- consists of a central organ (heart) and a system of blood vessels

## **MAIN TASKS:**

- distribute blood throughout the body
- supply individual tissues with oxygen and necessary nutrients
- remove carbon dioxide and metabolic waste products from tissues



# CARDIOVASCULAR SYSTEM



# CARDIOVASCULAR DISEASES

1. heart disease
2. circulatory dynamics disorders
3. diseases of the vascular system

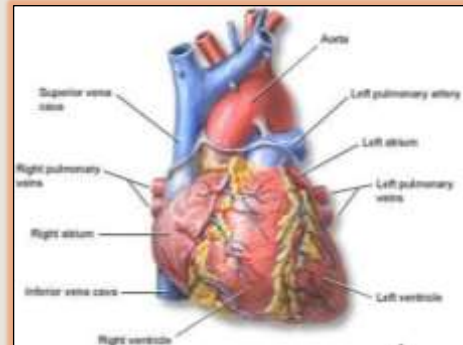
## MAIN SYMPTOMS IN HEART VASE DISEASES

- chest pain, shortness of breath
- swelling
- cyanosis
- discomfort in the heart
- syncope



# CARDIOVASCULAR DISEASES

- ISCHEMIC HEART DISEASE
- HYPERTENSION DISEASE
- NEUROCIRCULATORY ASTHENIA
- CONGENITAL HEART DEFECTS
- ACQUIRED HEART DEFECTS
- HEART RHYTHM DISORDERS
- CIRCULATORY INSUFFICIENCY



# CARDIOVASCULAR DISEASES

- they can be a limiting factor in physical activity and normal human activities
- circulatory system affected by some diseases, can not provide the necessary oxygen intake (involvement of the central component - the heart)

## IN CASE OF EXCESSIVE INTENSITY OF PHYSICAL ACTIVITY, THE FOLLOWING OCCURS:

- increase in heart rate
- the heart chambers widen
- reduced contraction and expulsion of the heart muscle

## THE BASIC DUTY OF THE COACH IS THAT DURING THE EXERCISE HE MUST MONITOR:

- load intensity
- evaluate obtained data



# *CARDIOVASCULAR DISEASES*

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## **MONITORING OF LOAD INTENSITY**

- plays a role in the adaptation of the cardiovascular system to physical activity

## **RECOMMENDED HEART RATE VALUES**

- 65 - 70% max.
- suitable for the training effect in the developing (conditioning) part of the exercise unit
- as a guide, we can follow the calculation to determine a safe heart rate:  $220 - \text{AGE}$



# *CARDIOVASCULAR DISEASES*

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## **BLOOD PRESSURE RESPONSE TO EXERCISE IS USUALLY:**

- normotonic
- hypertonic
- hypotonic





# CARDIOVASCULAR DISEASES

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## IMPORTANCE OF PHYSICAL ACTIVITY

➤ reduction of heart rate and blood pressure (both at rest and after exercise)

### ➤ ADAPTATION EFFECT

- we can achieve it with regular physical activity
- in the range of min. 3x1hour / week
- at an intensity of about 65% of the maximum



# CARDIOVASCULAR DISEASES

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## GENERAL RECOMMENDATIONS FOR PHYSICAL ACTIVITY

- a form of endurance training is suitable
- legs load is more advantageous than of arms
- physical activity must not be overdosed or underdosed => is effective
- it is ideal to work on the basis of a functional examination on a bicycle ergometer
- during exercise we pay attention to the coordination of heart, respiratory and movement rhythm
- it is necessary that all exercisers are able to measure their heart rate (by sports testers)



# CARDIOVASCULAR DISEASES

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## UNSUITABLE ARE:

- exercises leading to big fluctuations in blood pressure
- sudden changes in position and very emotionally demanding exercises
- exercises performed with the breath held and lifting heavy objects



# CARDIOVASCULAR DISEASES

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## 4 SICKNESS GROUPS ACCORDING TO THE RELEVANCE OF THE DISEASE

### I. GROUP

- heart disease without clear restriction of physical activity

**Exercise goal:** Increase or maintain in physical state

### II. GROUP

- heart patients with mild physical activity impairment who are having problems
- especially shortness of breath connected to increased activity of daily life

**Exercise goal:** to maintain and, if possible, increase the body's adaptation to physical and mental stress



# CARDIOVASCULAR DISEASES

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## 4 SICKNESS GROUPS ACCORDING TO THE RELEVANCE OF THE DISEASE

### III. GROUP

- heart disease with obvious limitation of physical activity
- have heart or breathing problems when walking short and slow
- perform basic daily activities more slowly

#### Exercise goal:

- to improve or at least maintain the patient's condition with a reasonable physical load
- contribute to improving the mental state



# CARDIOVASCULAR DISEASES

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## 4 SICKNESS GROUPS ACCORDING TO THE RELEVANCE OF THE DISEASE

### IV. GROUP

- heart patients who are unable to do any physical activity without difficulty
- Heart and breathing problems may be present at rest
- these are mostly bedridden patients with acute coronary problems with signs of decompensation

#### Exercise goal:

!!! IT IS CONTRAINDICATED !!!

due to subjective and objective difficulties



# CARDIAC EXERCISE UNIT

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1. OPENING PART
2. MAIN BALANCING PART
3. MAIN DEVELOPING PART
4. FINAL PART



# CARDIAC EXERCISE UNIT

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## OPENING PART

- we choose simple activities:
- small games
- alternating walking with trot
- different types of walking
- activities in low positions at a faster pace

## MAIN BALANCING PART

- we act on the propulsion system through basic compensating means
- we coordinate the movement with the breathing rhythm
- exercise intensity is low



# *CARDIAC EXERCISE UNIT*

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## **MAIN DEVELOPING PART**

- is important for a weakened exerciser
- we include activities with a load intensity of 65% working tolerance
- the limiting criterion is the limit of safe intensity given by the doctor
- The choice of exercises can be varied
- during the exercise, the rhythm and tempo alternate, resting pads are inserted
- we closely monitor:
  - signs of fatigue
  - heart rate values
- we react immediately to negative phenomena in exercisers



# *CARDIAC EXERCISE UNIT*

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## **FINAL PART**

- calming activities
- exercisers must reach heart rate input before leaving the exercise area
- breathing and relaxation exercises are suitable



# *WEAKNES OF THE DIGESTIVE SYSTEM*

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- The incidence of gastrointestinal diseases is increasing throughout the civilized world
- causes: incorrect lifestyle, increase in average age

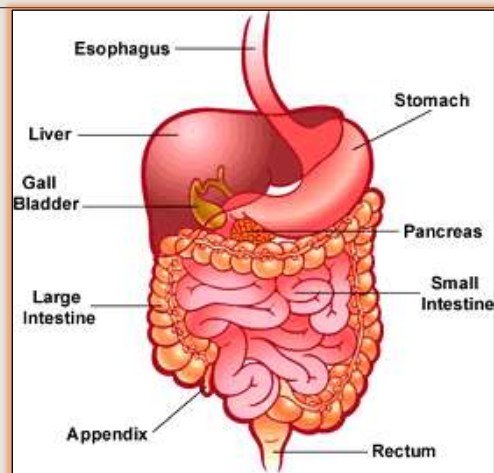
## **WE CAN SPEAK ABOUT MANY TYPES OF WEAKNESSES OF THE DIGESTIVE SYSTEM:**

- ORGANIC DISORDER - the cause of the disease is an anatomical lesion (inflammation, ulcer, tumor), infection, allergy
- FUNCTIONAL DISORDER - has no known cause in the structural lesion
- PAIN - one of the most typical symptoms of the disease



# *DIGESTIVE SYSTEM*

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# *WEAKNES OF THE DIGESTIVE SYSTEM*

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- when the digestive system is weakened, we make sure that exercisers follow a lifestyle

## **IMPORTANCE OF PHYSICAL ACTIVITY**

- positive effect on the neuropsychological system
- improving nutritional processes in tissues and organs
- activation of blood circulation in the abdominal cavity and small pelvis
- strengthening of the abdominal press
- improvement of digestive processes
- elimination of muscle imbalances



# *WEAKNES OF THE DIGESTIVE SYSTEM*

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## **RULES OF PHYSICAL ACTIVITY**

- in the period of relative calm we use basic compensating means
- we proceed carefully when strengthening the abdominal muscles
- we pay attention to proper breathing, we practice breathing wave
- relaxation exercises are very suitable
- exercise does not unnecessarily overload the body
- we choose a rather lower intensity of the load
- we recommend compliance with hygiene standards
- it is important to monitor the way of dressing during physical education activities (too tight clothing can mechanically affect the abdomen)



# *WEAKNES OF THE DIGESTIVE SYSTEM*

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## **ULCER DISEASES**

- we exclude exercises that increase intra-abdominal pressure
- shocks and impacts are not suitable

**WEAK ABDOMINAL** - more intense exercise to improve the abdominal press

## **STOMACH DECREASE**

- Jumps, longer runs and lifting heavy loads are not suitable
- exercises for muscles of the pelvic floor and I generally tone the muscles



# *OBESITY*

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- The mass incidence of obesity is a health problem in civilized countries
- long-term effects of obesity bring frequent complications
- obesity is a symptom
- we can define it as excessive storage of subcutaneous fat
- arises from a number of influences leading to the difference between energy intake and expenditure (in the form of thermal or mechanical)

## **WEIGHT GAIN OR OBESITY, DEPENDING ON THE ORIGIN, MAY BE:**

- PRIMARY - caused as a result of a disturbed energy balance
- SECONDARY - the origin is affected by another disease





# *OBESITY*

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## **FACTORS AFFECTING OBESITY**

- hereditary predisposition (occurrence of obesity)
- family environment (tastes, nutritional habits)
- nutrition
- psychological factors



# *OBESITY*

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## **WOMAN AND OBESITY**

- A woman has an increased body fat content compared to a man
- The hormonal equipment of men and women is different

## **SPECIFICALLY FEMALE RISKS FOR OBESITY:**

- menstruation
- pregnancy and lactation
- period of menopause



# OBESITY

$$\text{BMI} = \frac{\text{Weight ( in kilogram )}}{\text{height (m) } \times \text{ height (m)}}$$

## WHO CLASSIFICATION OF WEIGHT STATUS

WEIGHT STATUS	BODY MASS INDEX (BMI), kg/m <sup>2</sup>
Underweight	<18.5
Normal range	18.5 – 24.9
Overweight	25.0 – 29.9
Obese	≥ 30
Obese class I	30.0 – 34.9
Obese class II	35.0 – 39.9
Obese class III	≥ 40



# OBESITY

## EFFECTING OBESITY

- a long-term process
- we must address all the factors leading to obesity during it
- they are mainly caused by the loss of body fat
- active body components are changed minimally

## NEGATIVE ENERGY BALANCE

- is the essence of weight reduction
- the person expends more energy than he receives
- the organism is forced to mobilize its own energy reserves (maintained mainly in the form of fat) to maintain metabolism





# OBESITY

## RULES

combine physical activity with a suitable reduction diet

avoid damaging of the locomotor system

1. reduce their intake of energy rich diets
2. pay maximum attention to the composition of the reduction diet
3. The instructions for the recommended diets must be as simple as possible
4. to eat little and often
5. Follow a drinking regime

## OBESITY - EXERCISE UNIT

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- the division and structure of the exercise unit is the same as for the exercise units of other groups with disabilities
- differs in load intensity
- the endurance load in the exercise unit is initially low
- later we choose endurance dynamic loads of medium intensity (they have the most favorable effect on energy expenditure and transport system)
- exercisers should complete this activity every other day for at least 30 minutes



## OBESITY - EXERCISE UNIT

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1. OPENING PART
2. MAIN BALANCING PART
3. MAIN DEVELOPING PART
4. FINAL PART

Under weight	Normal weight	Over weight	Obese (Class I)	Obese (Class II)	Obese (Class III)
					
<18.5	18.5 – 24.9	25.0 – 29.9	30.0 – 34.9	35.0 – 39.9	>40.0



# *OBESITY - EXERCISE UNIT*

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## **DEVELOPING PART (conditioning)**

- at the beginning we will focus on more intensive exercise of the whole body
- we save joints by exercising in lower positions
- we increase the effect thanks to exercises on the stands or by circular training
- we include various gymnastic exercises without equipment or with equipment and tools
- we use exercises with music, adapted low aerobics, dance, ...
- signs of tiredness must be monitored
- if necessary, choose rest moments, especially for beginners



# *DIABETES MELLITUS*

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- has been known for 3,000 years
- We classify it today as a serious disease of civilization
- metabolic disease in which the metabolism of carbohydrates, fats, proteins, water and electrolytes is impaired
- the essence is insufficient production or insufficient effectiveness of insulin
- we know two types of diabetes (type I and II)
- in case of long-term untreated disease it can lead to chronic complications (vascular, cardiac, ocular, renal and nervous)



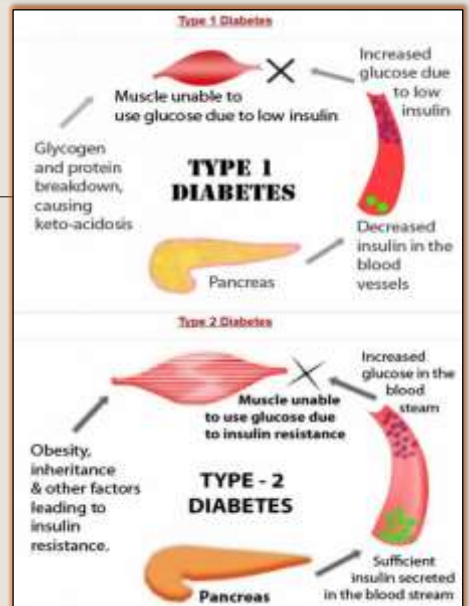
# DIABETES MELLITUS

## TYPE I. DIABETES

- has a hereditary basis (weakening for life)
- manifests in childhood and young age
- almost always requires treatment with insulin

## TYPE II. DIABETES

- usually starts after 40 years of age
- it is not only a lack of insulin, but also a reduced sensitivity of tissues to the action of insulin



# DIABETES - PHYSICAL ACTIVITIES

- we use functional muscle load to influence in positive way diabetes as a basic and generally valid instrument

## BY EXERCISE WE WANT TO ACHIEVE:

- improving the capacity and functionality of muscle mass
- improving motor skills
- increase physical fitness and performance
- improving the sensitivity of tissues to insulin and thus improving its utilization
- improving the use of glucose in the muscles



## *DIABETES - PHYSICAL ACTIVITIES*

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- the range between the minimum effective and the maximum still tolerated intensity of functional muscle load is very narrow
- especially for people unfamiliar with physical exertion
- before starting physical activity, it is necessary to consult a doctor
- every patient with diabetes should have a sugar cube to eat in case of hypoglycaemia (low blood sugar)

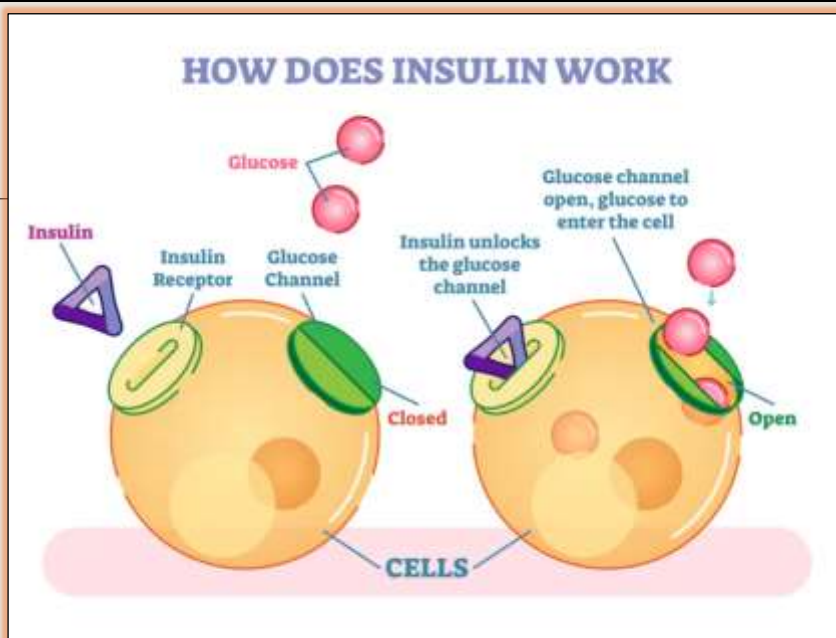


## *DIABETES - PHYSICAL ACTIVITIES TYPE I. DIABETES*

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- these are patients with absolute insulin insufficiency
- are dependent on treatment with insulin products
- mostly young or middle-aged people (their adaptability to functional physical activity is low)
- Exercise must not lead to a very strong metabolic response





## *DIABETES - PHYSICAL ACTIVITIES*

### *TYPE I. DIABETES*

#### **EXERCISE UNITS**

- are kept at intervals
- we involve individual muscle groups gradually
- we choose short-term and easy exercises
- exercise time does not exceed 45 minutes
- we switch the intervals of exercises with passive relaxation or we include exercises to relax muscles previously stressed
- we repeat the exercises contained in the exercise unit during each exercise to create a movement stereotype.
- constant repetition of the intensity of exercises increases performance and increases the development of active body mass





# *DIABETES - PHYSICAL ACTIVITIES*

## *TYPE II. DIABETES*

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- mature diabetics with insufficient reserve of insulin function
- it is necessary to increase energy consumption

### **EXERCISE UNIT**

- are conducted dynamically with the using of large muscle groups
- the duration of the unit in able-bodied people may exceed 45 minutes
- energy expenditure is about one third higher than for type I
- we eliminate muscle imbalances and strengthen muscles with targeted exercises
- we integrate more dynamic locomotor exercises, walking and recreational activities (swimming, cycling)
- even here it is necessary to monitor all signs of tiredness to avoid overload or hypoglycemia (it can develop acutely within a few minutes)



# *DIABETES - PHYSICAL ACTIVITIES*

## *TYPE II. DIABETES*

---

### **EXERCISE UNITS**

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# *DIABETES - PHYSICAL ACTIVITIES*

## *TYPE III. DIABETES*

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- applies to elderly diabetics who have reduced insulin production
- their physical fitness is often very low

### **EXERCISE UNITS**

- last a maximum of 30 minutes
- the energy expenditure is about half lower than for type I
- the pace and intensity of exercise is subordinated to the individual's ability to harmonize movement with a regular breathing rhythm
- gradually it is possible to include strength training to maintain the muscle corset
- inappropriately is high energy depletion



# *DIABETES MELLITUS*

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### **DIABETIC KETOACIDOSIS**

- severe metabolic breakdown
- occurs when a diabetic does not respect his lifestyle or omits insulin and in infectious diseases
- gradually developing physical weakness, thirst, nausea, vomiting, abdominal pain
- the breath is deep and you can smell acetone
- the pulse is filamentous
- The condition usually becomes unconscious
- Some patients may still be conscious and can walk, even with hard ketoacidosis



# *DIABETES MELLITUS*

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## **HYPOGLYCEMIC SHOCK**

- the most important complications of insulin treatment
- is caused by the patient injecting insulin without eating, or the dose being too high, or the patient being exposed to heavy physical exertion
- the patient feels physical weakness, sweats profusely, is pale, may give the impression of being drunk
- eventually falls unconscious and has convulsions
- if a diabetic is prone to hypoglycemia, it is good to have a few sugar cubes if they are in need of hypoglycemia





# *Gynaecological weaknesses and pregnancy*

MEDICAL ISSUES

## *GYNECOLOGICAL WEAKNESSES*

Gynecological disorders can be encountered at various times in a woman's life during puberty, adolescence, adulthood (pregnancy and childbirth) and during menopause

Insufficiently trained muscles, especially pelvic floor muscles, play a role in many gynecological problems

### **GYNECOLOGICAL DISORDERS HAVE A NUMBER OF SYMPTOMS**

- low back pain
- traction and pressure in the pelvis
- constipation
- failure to retain urine
- and others



# *GYNECOLOGICAL WEAKNESSES*

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## **PAINFUL MENSTRUATION**

- some positions that increase intra-abdominal pressure are not suitable, light movement is used during bleeding, use of relaxation

## **INFLAMMATION OF THE ORGANS IN THE SMALL PELVIS**

- can be performed with the consent of a doctor
- during exercise, there is blood circulation to the tissues, increased metabolism



# *GYNECOLOGICAL WEAKNESSES*

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## **DELAYED DEVELOPMENT OF THE UTERUS**

- manifests itself with weak menstruation after a longer interval or omission
- pelvic perfusion exercises, activities of moderate intensity are suitable,
- exercises on tools with endurance are not suitable,
- we exclude all exercises leading to an excessive increase in intra-abdominal pressure and any hard effects
- exercises lying on your belly or kneeling are suitable



# *GYNECOLOGICAL WEAKNESSES*

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## **LIGAMENT PAIN**

- occurs when the ligaments that surround the organs of the small pelvis are shortened.
- shortening occurs after inflammation, after static endurance, with insufficient exercise.
- exercises that relax the muscles of the hip joint and the muscles of the pelvis are suitable.
- We are gradually balancing muscle imbalances

## **DIFFICULTY IN RETAINING OF URINE**

- their incidence increases with age
- regular exercise is recommended



# *PREGNANCY AND SIX-WEEKS PERIOD*

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## **THE FIRST HALF OF PREGNANCY**

- we focus on ensuring muscle balance.
- Training of proper posture is important to prevent problems with increased demands on the whole locomotor system
- If woman is in good condition and she use to make a sport it's possible to continue but on the lower level than before pregnancy



## *PREGNANCY AND SIX-WEEKS PERIOD*

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### THE SECOND HALF OF PREGNANCY

- we focus more on strengthening the muscles of the pelvic floor and improving blood circulation in the lower limbs and abdomen so that there is no swelling
- We perform exercises in lower positions and include relaxation.
- We also practice special "dog" breathing and the deep breathing



## *PREGNANCY AND SIX-WEEKS PERIOD*

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### SIX-WEEKS PERIOD

- it is necessary to maintain increased hygiene to prevent infection
- A woman's body returns to the state before pregnancy.
- Women experience this period with a certain mental instability.
- The body is weakened after birth and is endangered by various diseases.
- Women benefit from rest
- more physical exertion is not recommended



## *PREGNANCY AND SIX-WEEKS PERIOD*

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### **SIX-WEEKS PERIOD**

- Exercise begins on the first day after birth. Exercise supports the "wrapping" of the uterus.
- The exercise is focused on two areas - strengthening the pelvic floor and abdominal wall.
- The effect of exercise can only be if it is performed correctly and regularly.
- After delivery by caesarean section, the exercises are more gentle and focused on the prevention of lower limbs venous disease
- After six-weeks period it's possible to start your training again but remember that everything should be done step by step



## *EXERCISE WITH BABY*

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## *EXERCISE WITH BABY*

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Talk to your doctor about the appropriate start of exercise

Of course, pay maximum attention to the safety of the child.

The baby should already hold its head by itself, make sure that it can really do it without any problems(usually around 3 to 4 months of age)



## *EXERCISE WITH BABY*

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exercised on the abdomen and center of the body



## *EXERCISE WITH BABY*

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Lifting the pelvis



## *EXERCISE WITH BABY*

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Passing babies from side to side



# EXERCISE WITH BABY

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Cranks over the baby



# EXERCISE WITH BABY

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Lunges and squats with a baby



## *EXERCISE WITH BABY*

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## *NUTRITION IN THE PERIOD BEFORE PREGNANCY*

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- its goal is prevention pathological conditions (fetus and mother)

- 1) Reduces the risk of congenital malformations of the child
- 2) Achieving optimal body weight affects uncomplicated course of pregnancy and is related to the birth weight of the newborn
- 3) An unbalanced diet can interfere with the proper development of the child.

### **NECESSARY SULEMENTS**

- Folic acid
- Unsaturated fatty acids
- Iron



# *NUTRITION DURING PREGNANCY*

A balanced diet is important in pregnancy

## **DIETARY COMPOSITION**

- 50-60% of calories from carbohydrates,
- 25-35% from fats
- 20% of proteins
- Vitamins
- Minerals

























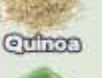







# *NUTRITION DURING PREGNANCY*

The goal is to reach the recommended amount of all nutrient groups during the week.

Balanced diet composed of various raw materials, especially:

fruits, vegetables, whole grains cereals, heart-healthy proteins and healthy fats, will provide almost all the nutrients which pregnant women need.



VITAMIN CHEAT SHEET			CALCIUM    MAGNESIUM    IRON    POTASSIUM    MANGANESE				
VITAMIN	WHAT WE USE IT FOR	FOOD SOURCES					
<b>A</b> VITAMIN A	For healthy vision, skin, bones, teeth & reproduction	Liver, Eggs, Fish, Milk, Carrots, Sweet Potato, Pumpkin, Spinach	 Spinach	 Almonds	 Pumpkin seeds	 Coconut water	 Cinnamon
<b>B1</b> THIAMIN	Helps convert food into energy and is critical for nerve function	Pork, Soy, Watermelon, Tuna, Spinach	 Broccoli	 Okra	 Kale	 Avocados	 Garlic
<b>B2</b> RIBOFLAVIN	Helps convert food into energy and supports healthy skin, hair, blood & brain	Dairy, Meat, Green Leafy Veggies, Enriched Wheat, Oysters	 Celery	 Flax seeds	 Broccoli	 Kiwi	 Thyme
<b>B3</b> NIACIN	Helps convert food into energy and is essential for healthy nervous system	Beef, Chicken, Shrimp, Avocado, Peanuts, Tomatoes, Spinach	 Mustard greens	 Dill	 Broccoli	 Brussels sprouts	 Chard
<b>B6</b> PYRIDOXINE	Helps make red blood cells and improves sleep, appetite & mood	Chicken, Tofu, Banana, Watermelon, Fish, Legumes	 Avocado	 Cacao	 Quinoa	 Tomatoes	 Turmeric
<b>B7</b> BIOTIN	Helps convert food to energy & break down glucose	Whole Grains, Eggs, Almonds, Soybeans, Fish	 Kale	 Basil	 Spinach	 Figs	 Collard greens
<b>B9</b> FOLATE	Vital for new cell creation and DNA synthesis	Legumes, Spinach, Leafy Greens, Chickpeas, Tomatoes, Asparagus					
<b>B12</b>	Breaks down fatty acids & amino acids, helps make red blood cells	Dairy, Beef, Pork, Poultry, Fish, Eggs					
<b>C</b>	Acts as an antioxidant, helps make new cells, & improves immune system	Fruit & Fruit Juices, Peppers, Broccoli, Tomatoes, Spinach					
<b>D</b>	Strengthens and helps form bones & teeth via calcium & phosphorus	Egg Yolk, Fatty Fish, Liver, Sunlight					
<b>E</b>	Acts as an antioxidant, helps stabilize cell membranes	Nuts, Avocado, Tofu, Whole Grains, Seeds					
<b>K</b>	Essential for blood clotting and helping to regulate blood calcium	Broccoli, Brussels Sprouts, Liver, Leafy Greens					

## NUTRITION DURING PREGNANCY

Energy intake may not increase during the first trimester of pregnancy.

From the second trimester should increase by approximately 150 - 200 kcal per day.

The need for protein increased to about 70 - 85g a day.

An excellent source of protein is meat, milk, dairy products, eggs, legumes, cereals...

Protein requirements are appropriate slightly exceeded so that the organism does not take action at the expense of the fetus

# *NUTRITION DURING PREGNANCY*

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The total daily intake of fats should be 75 - 80 g.

For fetal growth, the development of central nervous system and proper vision function, it is desirable to consume rather lean meat

During pregnancy a woman gains weight and stores fat in her body, from which she draws energy during breastfeeding

It is important to eat enough fiber to prevent constipation



# *NUTRITION DURING PREGNANCY*

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## **CARBOHYDRATES**

A pregnant woman should absorb carbohydrates mainly in the form of starches, which are contained in potatoes, in cereals, root vegetables

## **FIBER**

It is important to eat enough fiber to prevent constipation

The recommended daily dose of fiber is 25 to 35 grams.

The fiber is contained mainly in cereal products - whole grains, potatoes, legumes, in fruit and vegetables.



# *NUTRITION DURING PREGNANCY*

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## **PROTEIN**

During pregnancy, the supply of protein is essential for the overall physical growth of the baby, for proper development of cells, placenta and fetal tissues.

A pregnant woman needs them for increase amount of blood, growth of the uterus and milk tissues.

60 g of protein should be consumed daily

Lack of protein and energy can result in preterm birth and low birth

birth weight



# *NUTRITION DURING PREGNANCY*

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## **PROTEIN**

Good sources of protein include, for example:

poultry or fish,

cheese, milk, eggs.

From plant sources they are:

legumes, cereals and products thereof.

Proteins of animal origin have a higher biological value.

Proteins of plant origin are poorer in essential amino acids





# *NUTRITION DURING PREGNANCY*

## FATS

- Fatty acids are important for proper reproduction, growth, proper muscle function, vascular and nervous system
- The development of the child is associated with a high need for essential fatty acids

Pregnancy diet rich in omega 3 - fatty acids well affects the development of the baby's brain and nervous system throughout pregnancy even during breastfeeding.

They are in large numbers in fatty sea fish



## DIETARY FAT RECOMMENDATIONS

**45%**  
MONOUNSATURATED



**35%**  
OMEGA-3



**20%**  
SATURATED



BODY PHI



# *NUTRITION DURING PREGNANCY*

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## UNSUITABLE FOOD DURING PREGNANCY

- Raw meat, raw fish and seafood
- Fish that are likely to be elevated mercury content, for example swordfish, shark
- Unpasteurized milk and products thereof
- Raw eggs
- Liver
- Unwashed vegetables



# *NUTRITION DURING PREGNANCY*

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## FLUIDS IN PREGNANCY

In pregnancy the need for fluids increases.

The recommended daily fluid intake during pregnancy is 2-3 liters of fluid per day.

On hot days, the need for fluids increases to 3.5 l.



# *NUTRITION DURING PREGNANCY*

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## **SUITABLE FLUIDS IN PREGNANCY**

- Table water, mineral water, which are an important source minerals.
- It is necessary to alternate to change the concentrations of minerals that are delivered to the body.
- The supply of calcium and magnesium is important.
- It is also suitable to drink rosehip tea, strawberry, raspberry, linden blossom, 100% vegetable and
- fruit juices, vegetable broths and chilled fruit salads.
- Low-fat sweet or sour milks and cocktails prepared therefrom.



# *NUTRITION DURING PREGNANCY*

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## **UNSUITABLE LIQUIDS IN PREGNANCY**

black teas, which contain a lot of them, which is unsuitable for the developing fetus.

It's not recommended to drink coffee in large quantities that dehydrate.

Long-term drinking is not recommended in case of some herbal teas, Coca-Cola, tonic and alcohol.



# HEALTHY EATING PYRAMID

**HEALTHY EATING PYRAMID**

**HEALTHY FATS**  
NUTS, SEEDS & OILS

**DAIRY, MEAT, EGGS & ALTERNATIVES**  
MILK, CHEESE & YOGURT  
MEAT, FISH, EGGS, POULTRY, TOFU & LEGUMES

**GRAINS**

**VEGETABLES & LEGUMES**

**FRUIT**

**EAT MORE & DRINK**  
SALADS, HERBS & SPICES

**CHOOSE WATER**

**Limit Salt & Added Sugars**

*Enjoy a variety of food and be active every day!*

**Hydration Australia**

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