

THE PREVALENCE OF CURRENT PATHOLOGIES AMONG MILITARY STUDENTS AND PROPHYLACTIC METHODS

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Abstract : Purpose: In this paper, we aimed to analyze data regarding prevalence of certain pathologies that suit various organ systems of military students and also to expose prophylactic notions targeting these diseases.

Introduction: Assuming that each domain has characteristic risk factors, we want to point out the importance of all the medical measures necessary for preventing and monitoring the dysfunctions that occur.

Methods: The retrospective statistical study conducted by applying a questionnaire of 10 items on a representative sample (150 people) has fundamented this research.

Results: Following interpretation of the obtained proportions we prioritized the possible disease categories (attention and/or concentration disorders - 56% of all central nervous system pathologies; anorexia / hiperorexia - 68% in the digestive system; burning when urinating - 47% in the urinary sphere; minor trauma - 51% of osteo-articular system), pointing also predisposing aspects, diagnostic, therapeutics and preventives.

Conclusions: According to the results above, there are three major considerations highlighted: the existence of cause-effect relation in the syndromes found, its materialization in the military environment and the importance of knowledge, and last, the application of prophylactic rules.

Keywords: prophylaxis, military students, pathology, risk factors, therapy.

1. INTRODUCTION

The War of Independence was marked by a high number of injured soldiers, due to the tactics employed in assaulting enemy entrenchments. Along with diseases caused by improper hygiene and unfavorable weather conditions (humidity, low temperatures, frequent precipitations), organizing personnel in large groups made them more susceptible to being infected by (and further transmitting) anthrax, smallpox and the flu. The situation was worsened by digestive problems (dysentery) caused by poor quality food and contaminated water. [1]

As time went on, an improving economy and advancements made in all medical fields (diagnostics, treatment, recovery), the number of recorded illnesses at a national level were on a steady decline, both in the military and the civil sector.

2. PURPOSE

This paper aims to show the prevalence of the main pathologies afflicting military students, so as to systemize them and propose measures for improving their condition and optimising their activities.

3. OBJECTIVES

The main objectives of this study can be surmised as follows:

- collecting and analyzing data obtained from a questionnaires filled out by students from the 5 higher military education institutions in the country (The `Henri Coanda` Air Force Academy – Brasov; The `Nicolae Balcescu` Land Forces Academy – Sibiu; The `Mircea cel Batran` Naval Academy – Constanta; The Military Technical Academy – Bucharest; The Military Medical Institute – Bucharest/ TarguMures)
- establishing the proportions of the each system organ diseases
- outlining the interrelation of risk and pathology, as well as upholding the importance of applying preventative measures to stop further infections and disease outbreaks

4. RESULTS

The 10 item questionnaire was applied to a sample of 150 people and yielded the following results:

- attention and/or concentration deficits accounted for 56% of pathologies concerning the central nervous system
- anorexia – 68% of those affecting the digestive system
- minor trauma - 51% of the afflictions of the osteo-articular system
- stinging during urination – 47 % of problems of the urinary system.

QUESTIONNAIRE

Hi! We would like to ask you to answer the following questions by submitting an "x" in the appropriate box according to your answer and we would like to identify yourself by filling:

Age

Sex

Year of study

Specialization / Branch

University / Academy

1. Do you consider that maintaining your health in the physiological parameters is one of the most important factors in your military career?

Yes

No

I do not know

I am not interested

2. Have you experienced having pathological consequences highlighted in your daily activities?

Yes

No

I do not know

I am not interested

3. On which organ system of those listed below do you consider that the military factors acted in a maximal way?

- Central servous system
- Digestive system
- Urinary system
- Osteo-articular system

4. From the point of view of the central nervous system you have experienced ...

- ... attention and / or concentrating disorders?
- ... depression?
- ... panic attacks?
- ... physical, emotional and mental exhaustion (burnout)?

5. Which of the following digestive symptoms did you have?

- nausea / vomiting
- anorexia (lack of appetite) / hyperpyrexia (overgrowth of appetite)
- constipation / diarrhea
- dysphagia (difficulty swallowing) / abdominal pain

6. In the urinary system were present...

- ... burning when urinating
- ... frequent urination
- ... oliguria (decreased level of eliminated urine within 24 hours)
- ... pain in the urinary tract

7. Regarding the osteo-articular system you have suffered...

- ... minor trauma (sprains)
- ... major trauma (fractures)
- ... pain in the various segments of the spine (cervical, thoracic, lumbar, sacral-coccygeal)
- ... bone deformities (kyphosis, scoliosis, lordosis)

8. Do you believe that the repercussions of the daily schedule had a resounding:

- maximum
- moderate
- minimum
- meaningless

9. Which of the following characterize your attitude on those above?

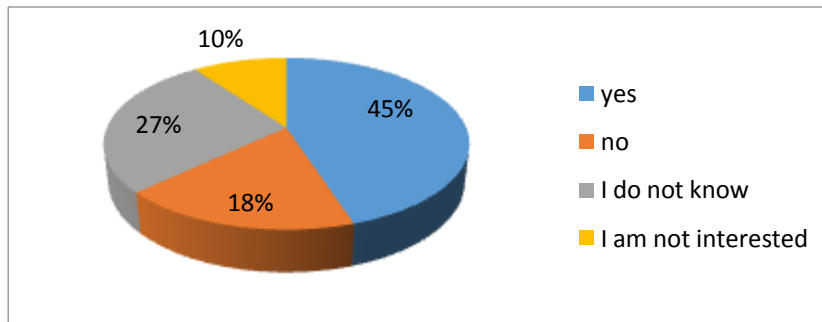
- indifference
- latency
- natural remedies
- medical treatment

10. Do you consider that existing prevention methods at the moment are effective enough? Yes

- No
- I do not know
- I am not interested

Thank you for your time !

1. Do you consider that maintaining your health in the physiological parameters is one of the most important factors in your military career?

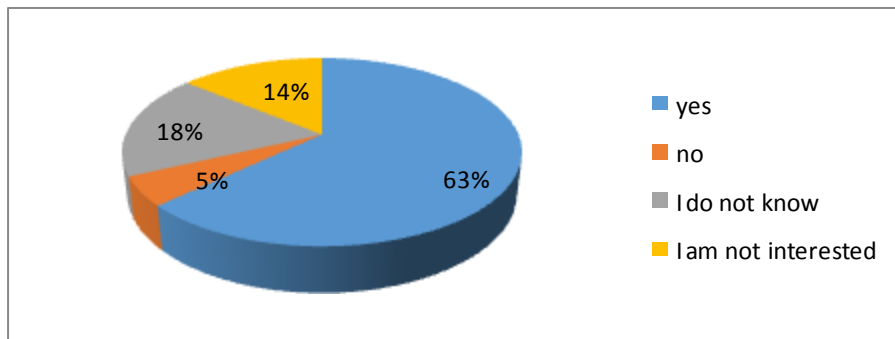


Most of the military students (45%) believe that maintaining physiological parameters of their health is one of the major determinants military career, 27% opted for the answer "I do not know", advocating for an insufficient knowledge of the implications of these variables, followed by 18% that answered "No" to this question, and choosing "I am not interested" representing 10%, which shows that these people are independent of the consequences that might arise in an imbalance.

The World Health Organization (WHO) provides in 1948 the consecrated health definition as: "the complete good state of physical, mental and social. It is not just the absence of disease or infirmity". The characteristics of this explanation are the following:

- it is accepted worldwide as a "aspiration"
- achieving it involves empowering society
- the definition emphasizes the positive and multiaxial character of health. [3]

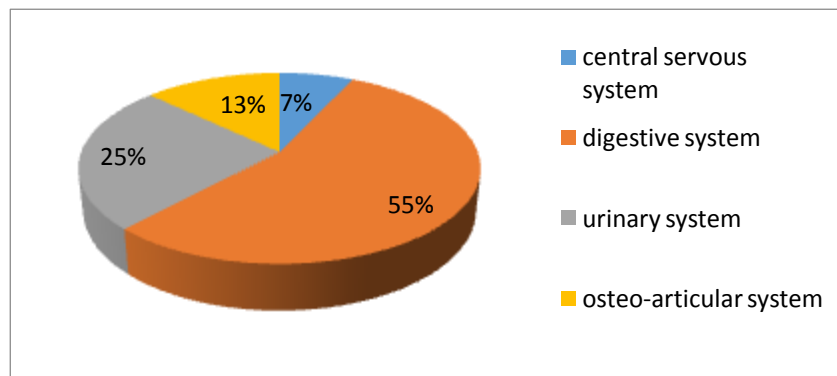
2. Have you experienced having pathological consequences highlighted in your daily activities?



Among the physiological factors that support work capacity is also the health status included, along with the psychological and the external nature ones (the work environment and socio-economic), in antithesis with the pathological factors which lead to diminishing the performances in a career.

Most of those surveyed had experienced pathological conditions with consequences highlighted in their daily activities (63%), and only 5% were not disturbed of such dysfunctions. 18% of participants can not decide if their schedule was influenced or not by negative symptoms, and 14% did not give importance to this aspect.

3. On which organ system of those listed below do you consider that the military factors acted in a maximal way?



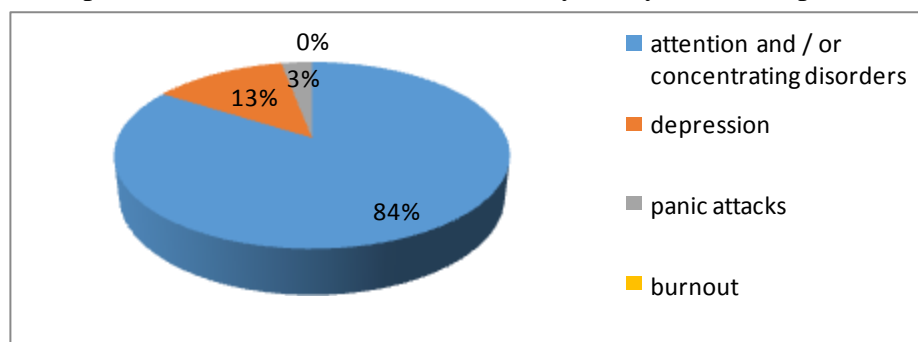
Each field shows, by its nature, a variety of risk factors, and the military system predispose also the appearance of various pathologies because of specific activities undertaken.

Predisposing factors can be classified into various categories, from which we remark:

- physical-factors: exposure to extreme temperatures, high humidity, excessive weather precipitations, intensity noise of over 90 dB (a normal conversation is about 65 dB)
- chemical-factors: toxic substances (irritating and asphyxiating), flammable (oil, petroleum)
- psycho-social factors: stress, disposed in collectivities, unpleasant tasks, the time needed to achieve the required pace of work. [3]

Notable is that the central nervous system is the last ranked at a ratio of 7%, and also gratifying because of the difficulty in treating these disorders, compared with the digestive system which, although occupies a leading position (55%) does not exhibit usually a threat.

4. From the point of view of the central nervous system you have experienced...



Memory works by the following algorithm: information -> attention -> concentration -> storage and disrupting any steps can create disturbances with implications of different intensity. Thus, attention disorders (84%) involve two directions:

- hypertrophy of attention, including fixed ideas (simple, accompanied by emotions or impulsive form)
- atrophy of attention, admitting the impossibility of maintaining or even the constitution of attention.

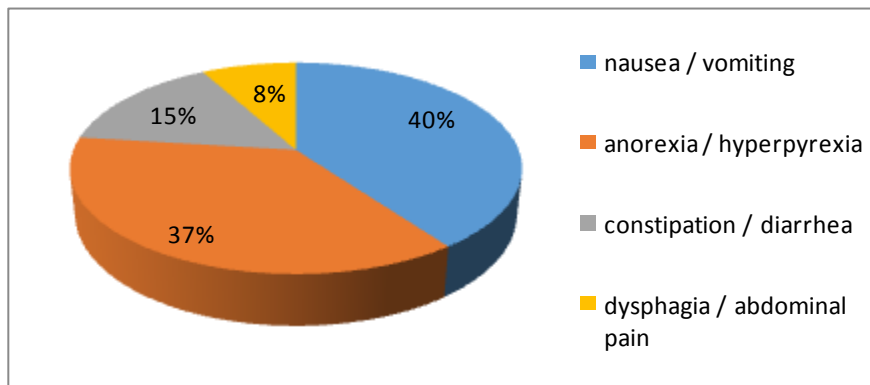
Concentration disorders may be caused by various factors, such as stress, anxiety, certain environmental factors (noise, sudden temperature increase or decrease), changing eating habits (quitting to drink coffee) and lack of sleep or disturbed sleep. [2]

Currently, major depression is the number fourth disease spreaded around the globe, representing one of the serious problems of contemporary man. According to estimates of the World Health Organization (WHO), in 2020, depression will be the second leading

cause of disability, soon after cardiovascular disease, with a prevalence twice as higher on women. [2]

13% of military students had at one time a depressive episode (diminution of interest in daily activities, sleep disturbances, psychomotor slowness, restlessness), 3% have accused the symptoms of a panic attack (palpitations, sweating, tremor, shortness of breath, imbalance, dizziness or fainting) and no recorded case of burnout (represented by physical and mental exhaustion and caused by prolonged exposure to stress, often accompanied by depression).

5. Which of the following digestive symptoms did you have?



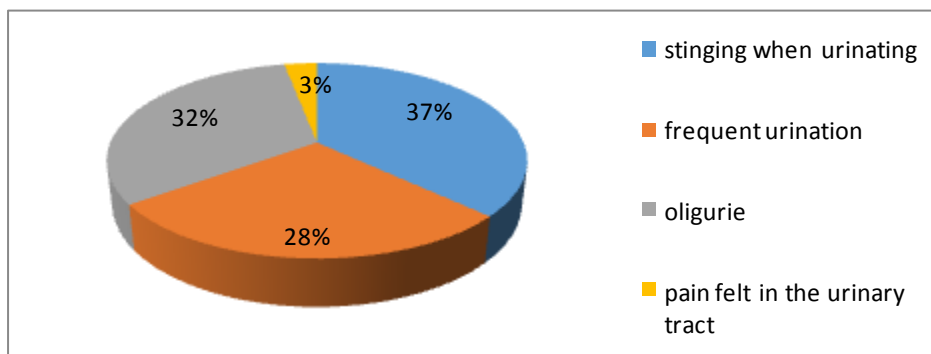
The percentage of 40% was represented by symptoms of "nausea / vomiting", which are, most often of short duration caused by indigestion, the latter being the result of several agents (too fast ingestion of food, smoking, gastritis and carbonated drinks); nausea and vomiting that last for a long period are reserved in cases of migraine, trauma, cancer etc.

Anorexia is an eating disorder with physical and emotional implications, having as main feature lack of appetite, unlike hiperorexie which involves uncontrollable need to ingest food in greater quantity, both with psychological substrate; 37% of students have opted for this answer.[3]

A balanced diet, rich in fiber, adequate fluid intake and maintained physical activity are some of the most important factors which prevent diarrheal syndrome and constipation, soldiers surveyed exhibiting these imbalances at a rate of 15%.

8% have enrolled variant response "dysphagia / abdominal pain", the first representing difficulty in ingesting food, both of which are generally caused by motility disorders, mechanical obstructions and disorders in the digestive tract.

6. In the urinary system were present...



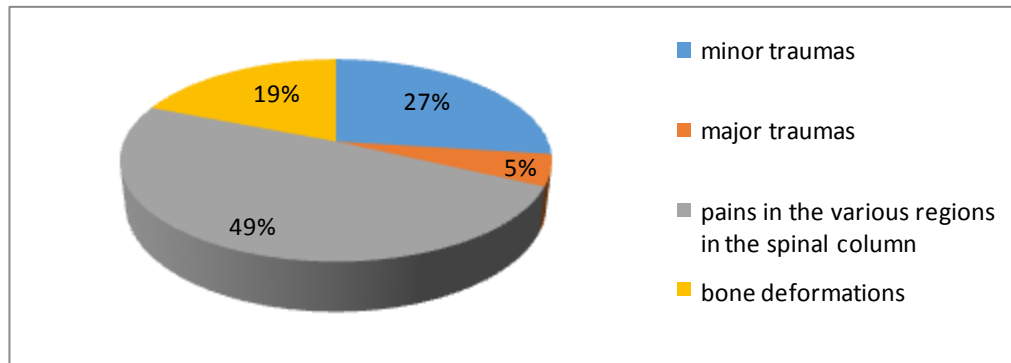
Stinging (37%) and frequent urination (28%), along with pain felt in the urinary tract all suggest the presence of urinary infections. Statistics show that these are the most common types of infections worldwide, surpassing even those of the respiratory system, with females being more often affected (due mainly to anatomical reasons).

In 80% of common urinary infections are caused by *Escherichia coli* (*E. coli*), a bacteria usually found in the colon or anus area. [3]

Oliguria (32%) is the production of abnormally small amounts of urine in a 24 hour period (below 500 ml) and is most often due to an extremely low fluid intake, or by expelling liquids through other natural means (dehydration).

Pain felt in the urinary tract is usually experienced as a result of inflammations or from kidney stones. The present study shows the rarity of this type of condition.

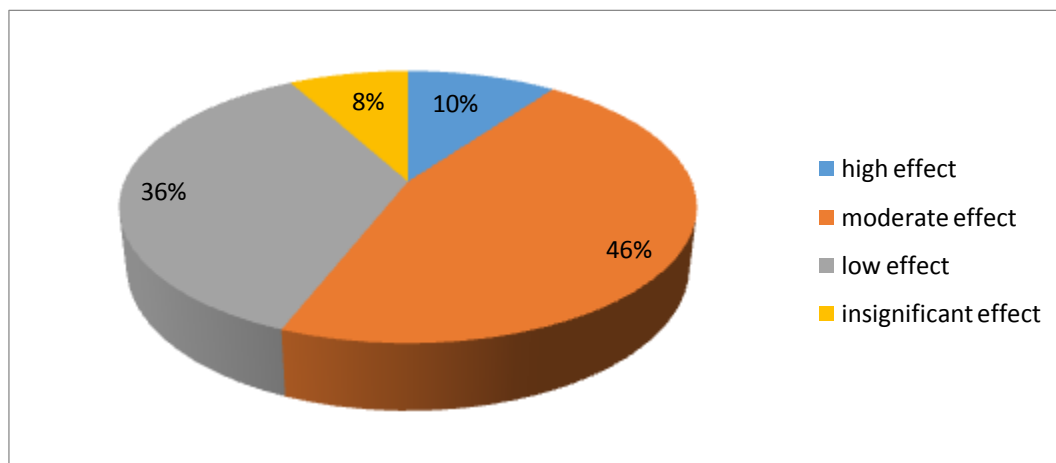
7. Regarding the osteo-articular system you have suffered...



Fortunately major traumas were only noted in 5% of the cases, followed by bone deformations (19%) and minor traumas (27%). Most common were pains in the various regions of the spinal column (cervical, thoracic, lumbar and sacral curve).

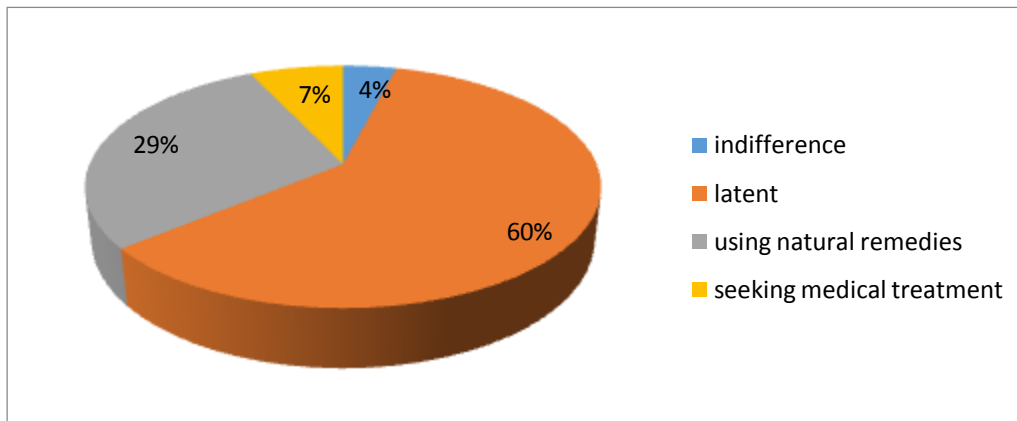
Bone deformations and spinal column pains are usually caused by improper posture and repeated pressure exerted by carrying heavy equipment, followed by unfavorable weather conditions and periods of intense physical activity. [3]

8. Do you believe that the repercussions of the daily schedule had a resounding :



The individuals questioned have stated that repercussions on the schedule have had either a high (10%), moderate (46%), low (36%) or insignificant effect (8%). This shows that they have varying individual capacities to adapt to changes, the gravity of their ailment influencing their choice.

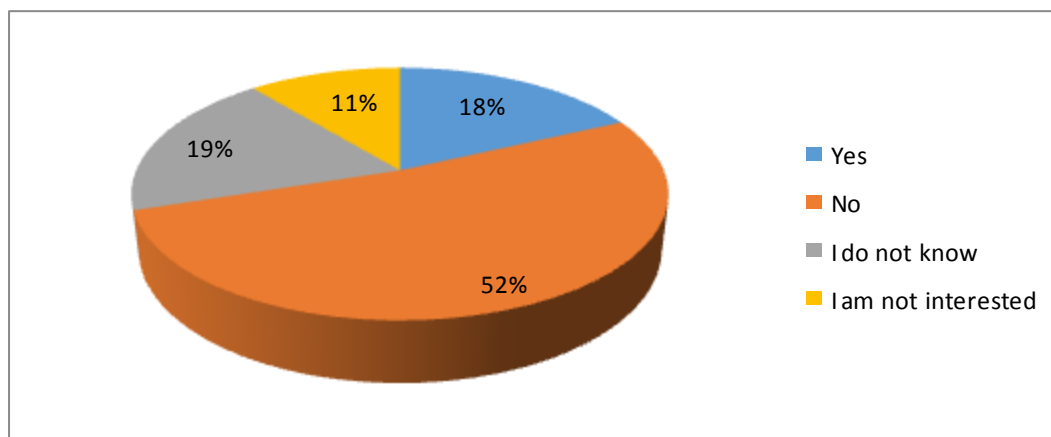
9. Which of the following characterize your attitude on those above?



The attitudes military students manifested as a response to the different afflictions:

- indifference (4%)
- latent (60%) – a state that can be viewed both in a negative, or positive light, as it is recommendable to avoid excessive treatment, but not to ignore the possible aggravation of the current affliction
- using natural remedies (29%) – a subject on the border between reality and myth (ex. products made from cranberries being used to treat symptoms of urinary infections)
- seeking medical treatment (7%) – choosing this answer shows that there were no severe pathologies noted, especially considering the lack of the comorbidities associated with these diseases in this age group. [2]

10. Do you consider that existing prevention methods at the moment are effective enough?



Prophylaxis represents all the measures taken to prevent disease and maintain a health. [2]

From the answers we have obtained, we can observe that prophylactic measures used at the present are not widely known. Only 18% claim to recognize the usefulness of these procedures, while 11% are not interested by them.

5. CONCLUSIONS

After conduction this study we can draw the following conclusions:

- prophylaxis is not a national objective at this moment, in regard to the afflictions and age groups presented previously. This calls for a bilateral implication to improve the situation

- the interdependence of the risk factor and pathology is confirmed, as a causal link was established and observed
- the study showed the variety of afflictions that military students suffer from. No extreme cases in large numbers were noted, however.

Central nervous system



- ✓ exercise regularly – try to remember all the things you have done at the end of the day
- ✓ take care of health conditions that may cause decreased nervous system functioning (such as getting plenty of rest)
- ✓ eat a balanced diet - low-fat diet with ample sources of vitamins B6, B12, and folate will help protect the nervous system; make sure that your diet contains lots of fresh fruits, vegetables and whole grains
- ✓ drink plenty of water and other fluids - this helps prevent dehydration, which can cause confusion and memory problems
- ✓ have your hearing or vision tested - when you do not hear or see well, it is hard for your brain to record information

- do not use alcohol or illegal drugs - it can affect functioning long after use
- do not smoke or use other tobacco products
- do not use nonprescription medicines - overuse of medicines may be the single biggest cause of nervous system problems in older adults

Digestive system

- ✓ follow a clean diet – choose fruits, vegetables and whole grains more often
- ✓ eat moderately, slowly and regularly - avoid putting too much stress on the digestive system => do not overeat, do not eat in a rush and do not skip meals
- ✓ maintain a healthy weight – normal BMI (body mass index) = $18,5-24,9$ (= $\frac{\text{weight (kg)}}{\text{height}^2 (\text{m}^2)}$)
- ✓ keep moving - exercise at least 30 minutes a day, doing activities you like, such as walking, aerobic or strength-building activities

- avoid eating late in the evening
- do not drink carbonated beverages, coffee and alcohol frequently

Urinary system

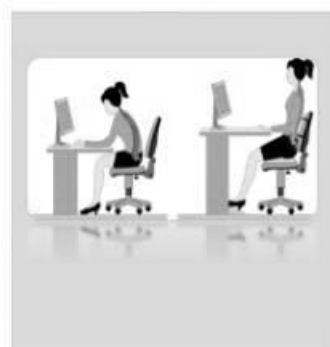
- ✓ pay close attention to hygiene
- ✓ stay hydrated – to eliminate toxins from the body, you have to drink at least 500 ml of water
- ✓ ask the right questions – if you suspect something is wrong, talk to your doctor
- ✓ wipe front to back to prevent a urinary tract infection in female patients - because the female urethra is an opening to the urinary tract, if bacteria is introduced into the tract it can cause an infection

- do not wait too long to use the restroom - withholding urination can put added pressure on your bladder which can lead to infection
- do not consume foods that may irritate the bladder - if you have an overactive or sensitive bladder, avoid carbonated and caffeinated drinks and alcoholic drinks




Osteo-articular system

- ✓ consume foods and drinks high in calcium (dairy products, broccoli) and vitamin D (fish, egg yolk); adults should be getting 1,000 mg of calcium and at least 600 international units of vitamin D every day
- ✓ try to get enough exercise
- ✓ work on good posture

- do not contact sports and other activities that increase the risk of joint injuries
- do not delay medical advice – prevention is better than cure



In case of...

CALL PROFA!!!



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