

PHYSICAL EXERCISE DURING AND AFTER CORONAVIRUS *A LOOK AT SOME INDOOR EXERCISE OPTIONS*

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SUMMARY

The proclamation of the corona virus pandemic (COVID -19) by the World Health Organization on March 11, 2020 and, in connection with that, anti-epidemic measures limited the maintenance of daily life needs related to movement, as well as work sports activities, both individually and in collective sports.

In order to maintain public health in a situation of reduced regular physical activity, health institutions, as well as prominent health workers, directed the public to the possibilities of physical activities, before at home, and then in open spaces suitable for walks with light exercises that activate the whole body.

Contributions to this effort were also given by educational institutions, primary and secondary schools, with daily presentations of possible exercise content, applied in the newly created conditions in the teaching of physical education.

The importance of physical activity is also in the prevention of good mental health and in sick people, the prevention of complications of further development of the underlying disease when it comes to the coronavirus pandemic.

Particular attention is paid to physical exercise during recovery and return to sports activities, since nutrition on the coronavirus can leave great consequences on vital organs in the treatment of this disease.

The diet for recovery after covid is also the subject of attention of the health profession, because it is impossible to recover the previous energy and functional state of vital organs without consuming an appropriate diet. Taxonomically, the types of quality foods are not listed for the course of treatment and the state after which and how which of them is necessary.

Key words: pandemic, coronavirus, exercise

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INTRODUCTION

New Illness, which surprised medical and public community, became known as COVID-19.

It's caused by Coronavirus, named SARS-CoV-2.

In the Republic of Serbia, first COVID-19 case was registered on 6th of march, 2020. Globally, first case was registered in China at the end of 2019. It was a new strain of Coronavirus, which wasn't present before among human population, but only among animals. It was spread, mostly by droplets, that can come from sneezing and coughing. Research indicates that average incubation time is about 5 to 6 days, but it can also last up to 14 days. People are the most contagious when they start developing symptoms, which can be fever, sneezing, coughing, muscle aches and general fatigue. some people can transmit virus even if they do not have anysymptoms. Virus can cause mild symptoms similar to flu, butin more severe cases it can cause Pneumonia, difficulty breathing, or even septic shock, which can lead to a death of a patient. People with other chronic conditions are more susceptible to more severe forms of this illness.

World Health Organization declared Coronavirus (COVID-19) pandemic on March 11th,2020;related to that, anti-epidemic measures,such as work from home, online teaching-since schools and colleges were suspended, limited freedom of movement (curfew), and closed sport facilities. All of that limited everyday activities, which also included sports activities, in both individual and collective sports.

In order to maintain optimal public health in a situation of reduced physical activity, health institutions, as well as prominent medicalofficials, instructed public on the possibilities of physical activities, primarily at home, butalso in open spacesthat are suitable for walks and light exercises, that involve the whole body. Which were the only possibilities at the moment in order to maintain optimal physical health during Coronavirus crises.

1. INDOOR EXERCISE- *SCHOOL POPULATION*

At the beginning of epidemic, rigorous measures were introduced. Interaction between people was reducedto a bare minimum.Physical activity in home setup was the only real possibility. Related to that, all kinds of simple and easy to perform exercises were introduced. Which are significant for optimal cardiorespiratory and muscular fitness.

Educational institutions, faculties, primary and secondary schools have contributed to this effort, as well as associations and societies for physical culture, through daily presentations of possible exercises, applied in the newly created conditions. Since most young people lacked physical activities in physical education classes, due to the suspension of classes in whole or in part, physical education pedagogues, through the website of their professional organization, suggested more content, and on this occasion, presented several effective exercises to maintain optimal motor skills, primarily the amplitude and mobility of movement in the joint and muscle area, as a basis for daily undisturbed activities of eachman.

For the proposed exercises, one needs a chair with a backrest and acane, ordinary room table and a blanket or a thin mattress.

1.1. Exercises with chair

Exercise I

- **Anexerciseris behind a chair in a stance, leaning on the back of the chair, feet slightly apart so that torso is stretched in a position of slight inclination, tight wrists and legs.**
 - ascent-descent (picture 1);
 - alternately with one foot then the other, at first slow, then faster and faster (picture 2);
 - ascent with a swing, legs extended forward, bent position (picture 3);
 - the same, alternatingbetween two feet (picture 4);
 - ascent-descent, alternately one after the other, and on the third ascent, leg, that is bent at the knee, swingsforward (picture 5);
 - preceded by exercisesin step movement.- "skip" (picture 6).



Picture 1



Picture 2



Picture 3,4,5



Picture 6

Exercises II

1. After the series of previous exercise, the exerciser starts from the same position, moving backwards, takes the position of the horizontal pre-column (90 degrees at hip line)

- with a swing and shoulders down, without separating the hands from the backrest of the chair.



2. Heels together, holding a cane behind the neck and in front of the arms:

- after leaning down, separate your hands from the backrest of the chair by around 20 cm and briefly hold the forward position, return to the starting position. Repeat several times, followed by a slope.



3. Lateral posture, with one hand on to the backrest of the chair, outer leg, tightened at all joints, arm raised above head.

- swing forward with outstretched leg and at the same time with the arm in the direction of the leg, so that fingertips touch the tip of the foot. Return to starting position;
- after a few repetitions, turn around, and do the same exercise with the other leg and arm.



4. Stepping on the chair (with and without hand on the backrest of the chair).



5. Sit on a chair, shoulder blades leaning on the backrest, pull away

- push the shoulders and arms back with more intensive leaning of the shoulder blades on the backrest of the chair;
- move arms from the shoulders, then slowly separate the back from the backrest of the chair,
- with an effort to keep the arms in the same position (behind the ears), short-term endurance.



6. The exerciser is behind the chair, leaning on the chair: position on one leg, other leg is in the forefoot inside (in front of the standing leg).

- swing the front leg in the frontal plane, repeat with the other leg.



7. Exerciser is in the same position as in the previous exercise, except the legs are separated:

- squat, transfer weight from one leg to another, without lifting the body and without separating hands from the backrest of the chair and
- separating hands from the backrest of the chair.



8. Same starting position as in exercise I

- push-up, elbows alongside the body, in relation to the strength of the arms and shoulder girdle determine the distance from chair backrest.



1.2. Exercises on a low, covered table (folded blanket, quilt, ...)

1. The exerciser is lying on his back with bent legs, arms differentiated according to the strength of the abdominal muscles. The exerciser is rising to the seating position and returns to the starting position:

- crossed on the chest (picture 1);
- with a cane behind the neck and in front of the hands in the undertaking (picture 2),
- with a cane behind the neck, in front of the arms crossed fingers (picture 3).



Picture 1



Picture 2



Picture 3

2. The exerciser is lying down on his stomach, the upper part of the body is outside of the table, with his hands on the ground (mixed arms resistance), partner is holding his feet, and then the exerciser crosses his arms behind his head.

- bending the body with forward-backward motion, (picture 4);
- the exercise can be made more difficult with a cane behind the neck, in front of arms with crossed fingers,(picture 5);



Picture 4



Picture 5

3.The exerciser is lying down on his back, his hands are holding the edge of the table behind his head, his partner is holding a cane above his stomach, it is desirable that another partner holds his elbows (which disables bending of the arms-which makes exercise easier)

- raising the legs to the vertical position, touching the cane (picture 6);



Picture 6

4. The exerciser is lying down on his back, his partner holds a cane over his head, which exerciser embraces with his hands

- with leg fixation (picture 7);
- without fixing the legs (picture 8);
- exerciser pulls his torso so that his chin touches the cane.



Picture 7



Picture 8

N O T E: Exercise repetition is individual - from a feeling of comfort to a light fatigue



With the further application of anti-epidemic measures, the schools have switched to partial direct teaching method, with shortened classes (half of the class) combined with distance learning, using information technology (the other half of the class).

With funding from the Provincial Secretariat for Higher Education and Scientific Research, our Society equipped three primary schools with devices and small props that were used effectively in the organization of classes in the new conditions.

1.3 Examples of how devices and props were used



Preparation of devices and props



Preparation of devices and props



Layout of devices and props for the class



Disposition of students for the beginning of the class

- Introduction to work -



Scene from one of the classes



Running technique exercise



Running technique exercise (from another angle)



Crouch position training



Abdominal muscle strength exercise



Preparation for relexercise

2. Coronavirus and exercise for adults-recreationists and professional athletes

One of several authors on the topic of exercise during the pandemic, asked a very original and somewhat witty question: "Did Covid-19 cause a *pandemic of inactivity?*"

Due to concerns about the inactivity of people and the increase in obesity, which was confirmed by research in Italy, France, Great Britain, Brazil and other countries, World health organization launched a campaign called **Healthy at home** where they showed simple exercises for various age groups, especially for people who are in high risk groups, such as people with obesity and other chronic conditions like hypertension and diabetes.

So, limited everyday activities of those with diverse physical activity habits, also regular exercise of professional athletes, isolation that should prevent further expansion of new Coronavirus (COVID-19), shows all the benefits of professional public proposal for implementation of regular physical activities in home conditions during Coronavirus. That includes aerobics, riding of stationary bicycles, skipping ropes, stationary running, chair stepping, and there is also a wide range of different exercises available on the internet, mobile applications and TV shows, that said, there is content for all ages and all kinds of individual physical abilities.

A few remarks should be made before introducing exercise into the regime of daily activities: at home, especially after a previous infection.

- Begin with lighter exercises, warm-up, and then select exercises that maintain optimal general motor skills (repetitive strength, mobility, balance, agility, ...) and then amplify intensity, in line with age and general health condition of the person who decides to

exercise, as well as the athletes depending of the degree of their readiness;

- Do not strain your body too much during exercise, make small breaks (15-20 seconds) between individual exercises.
- Finish your training with exercises with light stretching and relaxation.

In general, unanimous position and recommendation from health professionals:

- Everyone should exercise as much as they can, depending of what psychomotor skills one has - recreational, active athletes, as well as how much some preexisting condition can allow.
- in order to assess the ability of an individual before exercise, regardless of the status of the exerciser, it's necessary to perform a physical check in health care institution.

With the opening of sports fields and halls, swimming pools, and other sports facilities, the above recommendations are even more significant, because, tragic consequences have, unfortunately, occurred.

Recovery and return to exercise after Coronavirus of either professional athletes or everyone else didn't involve

D-dimer tests, that can show whether or not the one is susceptible to coagulation disorders, (pulmonologist, cardiologist).

In the end, it should be said that right kind of nutrition during symptoms and recovery is important for the body to return to its physiological optimal and thus to overall health, in order to continue a normal life, and a return to daily activities.

A large number of professional texts were presented through media. They aimed to help with proper nutrition during coronavirus and mainly focus on preparing foods that are rich in vitamins and minerals (C and D, plenty of boiled vegetables, fresh fruit, ...) proteins (meat, eggs, dairy products) and plenty of fluids, water, tea, soups). They also recommended cereals and starch vegetables, dried fruit, nuts and seeds, with limitations in intake of salt, sugar and fat.

LITERATURE:

Selected professional texts on the Internet:

1. Anđelković Nataša: Coronavirus, isolation and nutrition
2. Dedejić Danijela: Moderate physical activity important for complete recovery from COVID-19

3. Duarte Ferdinand: Coronavirus and exercise
4. Expert texts of the City Institute of Health, Belgrade and the Institute of Public Health, Niš
5. Forester dr. Mirjana: Covid-19 and nutrition
6. Maričić Slobodan: How to be fit in quarantine and isolation
7. World Health Organization: Advice on food and nutrition during self-isolation

ФИЗИЧКЕ ВЕЖБЕ ТОКОМ И ПОСЛЕ КОРОНАВИРУСА ПОГЛЕД НА НЕКЕ ОПЦИЈЕ ВЕЖБАЊА У ЗАТВОРЕНИМ ПРОСТОРИМА

САЖЕТАК

Проглашењем пандемије вирусом короне (КОИД -19) од стране Светске здравствене организације 11.03.2020.године и, стим увези, противепидемијским мерама ограничено је одржавање свакодневних животних потреба која се односе на кретања, као и радних спортских активности, како у индивидуалним, тако и у колективним спортовима.

Ради одржавања јавног здравља у ситуацији смањене редовне физичке активности, здравствене институције, као и истакнути здравствени радници усмеравају су јавност на могућности физичких активности, пре свега у кућним условима, а затим и на отвореним просторима погодним за шетње уз лагановежбама које активирају цело тело.

Допринос овом настојању дале су и образовне институције за физичку културу, основне и средње школе путем свакодневних презентација могућег вежбаоног садржаја, примењеним у новонасталим условима у настави физичког васпитања.

Значај физичких активности је и у превенцији доброг менталног здравља и код оболелих особа спречавање компликације даљег развоја основне болестикада је у питању и пандемија вирусом короне.

Посебно се поклањала пажња физичком вежбању у току опоравка и повратку спортским активностима с обзиром да коронавирус може да оставивелике последице на виталне органе после прележане ове болести.

Исхрана за оправак после ковида такође је предмет пажње здравствене струке, јер је немогућ оправак претходне енергије и функционалног стања виталних органа без конзумирања одговарајуће исхране. Наведене су врсте квалитетних намирница за ток лечења и стање након тога када и како која од тих је неопходна.

Кључне речи: пандемија, корона вирус, физичко вежбање

ФИЗИЧЕСКИЕ УПРАЖНЕНИЯ ВО ВРЕМЯ ЗАБОЛЕВАНИЯ КОРОНАВИРУСОМ И В ПЕРИОД ВЫЗДОРОВЛЕНИЯ ОБЗОР НЕКОТОРЫХ ВАРИАНТОВ УПРАЖНЕНИЙ ДЛЯ ВЫПОЛНЕНИЯ В ПОМЕЩЕНИИ

АННОТАЦИЯ

Аннотация: В связи с тем, что 11 марта 2020 года Организация здравоохранения объявила о пандемии коронавируса (COVID -19), меры, направленные на борьбу с эпидемией ограничили людям возможность реализовывать повседневные жизненные потребности, связанные с движением, а также занятиями спортом, как в индивидуальном режиме, так и в коллективных видах спорта.

В условиях снижения регулярной физической активности населения, учреждения здравоохранения, а также медицинские работники ориентировали представителей разных поколений на возможности физической активности для поддержания здоровья, указывая, что и дома, и на открытых пространствах, подходящих для прогулок, можно выполнять легкие упражнения, активизируя все отделы тела.

Определенный вклад внесли и учебные заведения, начальные и средние школы, ежедневно представляя содержание физических упражнений в преподавании физической культуры, применяемых в новых условиях.

Физическая активность важна также для профилактики хорошего психического здоровья, а у больных людей физические упражнения предотвращают осложнения дальнейшего развития основного заболевания, вызванные пандемией коронавируса.

Особое внимание уделяется физическим упражнениям в период восстановления и возвращения к занятиям спортом, так как коронавирус может привести к тяжелым последствиям при лечении заболеваний жизненно важных органов.

Диета для восстановления после ковида также является предметом внимания медиков, так как невозможно восстановить прежнюю энергию и функциональное состояние жизненно важных органов без продуктов соответствующей диеты. Не указаны типы качественных продуктов питания для курса лечения и улучшения состояния.

Ключевые слова: пандемия, коронавирус, физические нагрузки.

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