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# **TRAINING MATERIAL APAS - SWIMMING FOR PEOPLE WITH SPINAL DISTORTION AND FLAT FOOT**

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## **INTRODUCTION**

The prepared training material for swimming training for people with spinal deformities and flat feet is intended for swimming coaches, physical education teachers, recreationists, as well as for people wishing to acquire knowledge in the field of swimming.

The training material consists of descriptions of the exercises by the Halliwick method - the exercises for swimming and mastering and improving the swimming techniques crawl, back, breaststroke and butterfly. Within the descriptions of the exercises, 46 exercises using the Halliwick method and 70 exercises for swimming techniques are presented.

According to the Halliwick method, swimming training is conducted without aids, while in learning and improving swimming techniques, aids can be used to facilitate the performance of paddles with the hands and movements with the feet. In this training, footboards, boards for independent work of hands, fins, shovels for hands, inflatable shoulders, belts, etc. are used above all. Depending on the abilities and capabilities of people, some of the listed accessories are used.

The curriculum for 40 hours of swimming consists of 15 hours for learning the Halliwick method, 24 hours for learning and improving swimming techniques and one hour for testing the acquired knowledge.

The part related to theoretical training is a series of theoretical lectures that must accompany or precede the practical exercises.

### **Exercises and techniques in different styles.**

1. Swimming on the back (alternating movements of the arm). Take a position parallel to the surface of the water, place your hands on your body, your eyes are on the ceiling. Start making alternating movements of your legs up and down, at the same time slowly begin to alternate your arms. This way you have to swim 150 meters.
2. Swimming on the back (simultaneous movements with both hands). Take the position of the body by analogy with the previous exercise, but now you will have to row with both hands at the same time. Swim 50 meters.
3. Breaststroke. Breaststroke is performed on the chest, while the left and right limbs make symmetrical movements in a horizontal plane parallel to the water surface. The swimming distance must be 100 meters.

4. Crawl. It is considered one of the fastest types of swimming. This is a method in which the arms alternate sequentially along the axis of the human body, and the legs alternate up and down. The person's face is placed under water most of the time to take a breath, the head periodically turning to the side during the impact. Swim 150 meters in this style.

5. Butterfly. Swimming with this style is considered the most difficult and physically exhausting. Butterfly is a type of swimming in which the left and right limbs perform symmetrical movements (arms - powerful blows, and legs - wavy movements). Swim 150 meters in this style.

In total for 1 lesson you have to swim about 500 meters in different styles. Classes should be held no more than 2-3 times a week. If for some reason you cannot perform such a volume load, reduce the swimming distances to an acceptable level for you. People who do not have enough swimming skills can buy special swimming boards made of plastic, upgraded foam, polyethylene foam and other material. Упражнения за обучението по техниката кроул

Exercise 1. The swimmer sits on the floor, leaning his arms back, and with outstretched legs simulates the movements of the legs for the crawl technique.

Exercise 2. The swimmer sits on the edge of the pool, leaning his arms back, and with outstretched legs simulates the movements of the legs for the crawl technique.

Exercise 3. The swimmer is in the pool in a horizontal position on his chest, holding the edge of the pool with his hands and with outstretched legs simulates the movements of the legs for the crawl technique. The task is to work only the legs, with proper movements of the pelvis. The head is located in the direction of the spine and between the arms, and air is taken in when lifting the head up.

Exercise 4. The swimmer is in a horizontal position on his chest and holds a swimming board with both hands. The task is to work only the legs, with proper pelvic movements, without arm movements. The position of the head and the way of taking in air are the same as in the previous exercise.

Exercise 5. The swimmer is in a horizontal position on his chest with outstretched arms above his head, his palms are on top of each other, his body is stretched and tight (arrow position, stream line). The task is to work only the legs, with proper movements of the pelvis. The head is located in the direction of the spine and between the arms, air is taken in by lifting the head up. The work of the legs is continuous, the surface of the water is between the eyebrows and the forehead. When inhaling, there should be no movement in the pelvis while the work of the legs is intensified, so that there is no sinking due to the intake of air.

Exercise 6. The swimmer is in a horizontal position on the chest, one arm is stretched over the head and the other is next to the body, the head is located in the direction of the spine, air is taken by turning the head on the side of the arm that is next to the body. The swimmer makes movements with his legs for a crawl without a board, the work of the legs is continuous.

Exercise 7. The swimmer is in a horizontal position on his chest with both hands next to the body, the head is located in the direction of the spine, air is taken in by turning the head on one side and then on the other. The work of the crawl legs is continuous.

Exercise 8. The swimmer is out of the pool and dry drills with one hand only, while the other hand is next to the body. The raking is done by moving the palm down and back so that the angle in the elbow joint is about 90°, after which the hand is pushed back, the trajectory of the raking looks like the Latin letter S.

Exercise 9. The swimmer is outside the pool and dry rowing with alternating hand movements.

Exercise 10. The swimmer is in a horizontal position in the pool and exercises rowing with only one hand, while the other hand is next to the body and performs movements with the legs. The task is to place the palm so that it is parallel to the bottom of the pool at the beginning of the paddle, while the arm is stretched over the head. Rowing is done by moving the palm to the bottom of the pool and back to the feet so that the angle in the elbow joint is about 90°, then the water is pushed down to the thigh, the trajectory of the rake looks like the Latin letter S. One distance is swum only with one hand while the other hand is next to the body. The exercise is repeated several times with a change of arm.

### **Exercises for training in the technique of breaststroke**

Exercise 1. The swimmer sits on the edge of the pool, leaning his arms back, and in the water imitates the movements of the legs for the breaststroke technique.

Exercise 2. The swimmer lies on his stomach on the edge of the pool and in the water imitates the movements of the legs for the breaststroke technique.

Exercise 3. The swimmer is in the pool in a horizontal position on the chest, holding the edge of the pool with his hands, and with outstretched legs simulates the movements of the carats for the breaststroke technique, moving the heels to the buttocks, in the final position turning the feet sideways and with the inside of the lower leg and the feet push back until the legs are joined. The task is to work only the legs so that the knees do not spread more than the width of the thighs. The head is located in the direction of the spine between the arms, air is taken in by lifting the head up.

Exercise 4. The swimmer is in a horizontal position on his chest and holds a swimming board with both hands. The task is the same as in the previous exercise, only the legs work.

Exercise 5. The swimmer is in a horizontal position on his back and holds a swimming board with both hands. The task is for both legs to perform movements simultaneously. The head is located in the direction of the spine.

Exercise 6. The swimmer is dry, bent at the hip and bent forward. He stretches his arms forward and simulates the strokes for the breaststroke technique, turning his palms sideways at the beginning of the rowing and pushing out until the palms cross the line at shoulder girdle level, then pushing back to the line at chest level, then the palms are pushed. join and the arms return to a stretched position forward.

Exercise 7. The swimmer is dry, bent at the hip and bent forward. He then simulates the paddles for the breaststroke technique so that the hands make a heart-shaped movement.

Exercise 8. The swimmer lies on his stomach on a bench and simulates the paddles for the breaststroke technique so that the hands make a heart-shaped movement.

Exercise 9. The swimmer is in a shallow pool with water up to the waist and simulates the paddles for the breaststroke technique, as described in exercises 7 and 8. The head is located in the direction of the spine and between the arms, air is taken in as soon as the arms begin. to stretch forward.

Exercise 10. The swimmer is in a shallow pool with water to the waist, the task is to walk from one edge of the pool to the other with his head in the water and to simulate the paddles for the breaststroke technique.

### **Exercises for training in back technique**

Exercise 1. The swimmer sits on the floor, leaning his arms back, and with outstretched legs simulates the movements of the legs for the back technique.

Exercise 2. The swimmer sits on the edge of the pool, leaning his arms back, and with outstretched legs simulates the movements of the legs for the back technique.

Exercise 3. The swimmer is in a horizontal position on his back with outstretched arms above his head, his palms are on top of each other, his body is stretched and tight (arrow position, English Stream line). The task is to work only the legs, with proper movements of the pelvis. The head is located in the direction of the spine, between the arms.

Exercise 4. The swimmer is in a horizontal position on his back with his hands next to his body. The task is to work only the legs, with proper pelvic movements, without arm movements. The head is located in the direction of the spine.

Exercise 5. The swimmer is in a horizontal position sideways with one arm outstretched above the head and the other next to the body, working only with the legs, with proper pelvic movements, without arm movements. The head is located in the direction of the spine and to the outstretched arm. The exercise is repeated on the other side.

Exercise 6. The swimmer is in a lateral position with his hands next to his body. The task is to perform movements only with the legs, the head is located in the direction of the spine and does not move. After 12 movements of the legs, the swimmer turns and takes a position on the other side, the head remains calm and the rotation is fast.

Exercise 7. It is performed in the same way as the previous one, but this time the rotation of the body is after 6 movements of the legs.

Exercise 8. The swimmer is out of the pool and dry drills with one hand only, while the other hand is next to the body. The task is to place the palm so that the fifth finger (the puppy) is turned backwards, at the beginning of the rowing, while the hand is extended above the head. The raking is done by moving the palm back and down so that the angle in the elbow joint is 90°, after which the palm moves down, the trajectory of the raking looks like the Latin letter S.

Exercise 9. The swimmer is out of the pool and dry rowing with both hands in succession. The task is at the beginning of the scooping to place the palm of the hand, which is extended above the head, so that the fifth finger (the puppy) is turned back, and the palm of the hand, which is next to the body, is placed so that the thumb is facing forward. Raking is done with successive movements of both hands.

Exercise 10. The swimmer is in a horizontal position on his back in the pool and exercises rowing with only one hand, while the other hand is next to the body. The task is at the beginning of the paddle, while the hand is extended over the head, to place the palm so that the fifth finger (puppy) is facing the bottom of the pool. Rowing is done by moving the palm to the bottom of the pool and back to the feet so that the angle at the elbow joint is 90°, then the palm moves down to the thigh, the trajectory of the rake looks like the Latin letter S. The other hand is next to the body.

**For the shallow part of the pool is suitable for the following exercises:**

1. In a chest-to-chest position in water with your legs wide apart, lean forward. After taking a deep breath, exhale for a long time in water. Make hand movements with a breast ..
2. In the side rail of the pool. On the abdomen: keep your legs straight and open in an upright position, perform alternating movements with crawling and breaststroke. On the back: do the same, but with the addition of a leg movement called "cycling".

3. Crawl parallel to the water surface with arms outstretched. Pushing from the side, try to practice kicking, breaststroke and other styles of swimming.

By performing these exercises, you can strengthen your muscles, improve your coordination and, over time, fully master the technique of swimming in different styles.

It is worth noting that the described styles of swimming and exercises in the water can be used in the presence of scoliosis of grade 1 and 2. For more complex forms of deformity (grade 3 and 4) the training program should be chosen exclusively by qualified specialists

Swimming in the pool for scoliosis begins with exercise. They help strengthen the respiratory system and various muscle groups.

It is recommended that each lesson begin with breathing exercises. It includes the following exercises:

- We stand up straight and put our hands on the edge of the pool. We take a deep breath, hold our breath and immerse ourselves in the water. We lower our head into the water and exhale. We return to the previous position and repeat the complex again. You should do about 10 exhalations in one session.
- We stand with our backs to the pool wall and take a breath. Then we dive headlong into the water. Exhale slowly under water for 15-20 seconds. Then we pause for 15 seconds and do the complex again. We repeat the complex about 10 times in one session.
- Lie face down directly on the water and grab the edge of the pool with your hands. We make movements with the legs up and down, imitating the movements of the legs with fins. The range of motion is low. Then we raise our heads, take a deep breath, hold our breath and immerse ourselves in the water, exhale into the water. The complex takes about 2 minutes.

#### **Approximate set of exercises for adults and children with scoliosis:**

- Stand facing the side, put your hands on it, inhale, hold your breath, immerse yourself in the water with your head as you exhale, stand in the starting position. Repeat the exercise up to 15 times.
- Lie on your back, swim on your back, rowing with both hands in time to a distance of up to 100 m.
- Inhale, dive headlong into the water, make rhythmic movements with the lower limbs, float on the exhale, pull your knees to your abdomen, keeping your back straight, socks and knees should be on opposite sides. Repeat up to 15 times.
- Swim in the 100m butterfly style, hit with folded arms, back should be straight.



- Swim 100 meters in board style.

Finish the swimming session with breathing exercises.

An individual program should be prepared, taking into account the characteristics of the body, the preparation of the person and the degree of the disease. Swimming should be monitored by a doctor.

In grade 1 scoliosis, the swimmer can breastfeed in the pool. It is necessary to extend the sliding pause as much as possible. To train your legs, you can crawl on your chest. .

In scoliosis of 2 degrees is useful breast. Asymmetrical swimming positions will reduce the tension on the concave side of the spine. Swimming can help with grade 3 scoliosis.

With scoliosis of 4 degrees it is too late to talk about correction, but it is possible to strengthen the cardiovascular system. Exercise should be aimed at promoting health. Useful bust on the stomach, a cycle of breathing exercises. Swimming at speed is useful, but it is best to do short distances. The last exercise should be monitored by the coach / doctor.

It is important how well the swimmer performs the exercises in the pool. It should be borne in mind that breaststroke swimming consists of the following phases:

1. Working, includes a punch and take-off with the feet.
2. Sliding. During it, the swimmer does not move. Swimmers should strive to prolong this phase as long as possible. At this time the spine is maximally stretched and straight ..

For example, the distance is 50 m. During this time, the sliding technique must be performed 15 to 20 times. Exercise promotes the development of a muscular corset that will keep the spine in the correct position.

- The interval between classes should be from 24 to 72 hours.
- One training time - 60 minutes.
- Swimming should be moderate.
- Visit the pool at least 3-4 times a week to achieve a positive result.
- The water temperature should be comfortable enough - 28-32 o
- If you have grade 1 scoliosis, it is recommended on the chest, the preferred style is bust. Give preference to the same style if the curvature predominates in the chest.

- Choose exercises individually, do them regularly and never give up - achieve results. Exercise should take into account your age, comorbidities, if any, body characteristics, degree of arch and type of scoliosis.
- Do not jump into the water, it is contraindicated in scoliosis.
- Do not rotate or extend the spine using special devices.
- With each new arrival of swimming, the load must increase so that you can quickly achieve a positive result.
- Do not continue to train if you feel tired.
- Medical supervision is required during swimming.
- For best effect, combine swimming with other scoliosis treatments.

1. There are three main breathing exercises in water for scoliosis, namely:

1.1 Stand upright with your hands on the side of the pool. Then take as deep a breath as possible and hold your breath, then immerse it under water. In the water, lower your head and exhale directly under the water, then return to the starting position. Requires 12 repetitions in one session.

1.2. Stand with your back to the pool wall and inhale as deeply as possible. Then sit in such a way that you are completely immersed. Now exhale slowly (it is desirable to exhale for 15-20 seconds), then float, wait 10 seconds and repeat the exercise 12 more times.

1.3. Lie face down on the water, then grab the side of the pool with your hands. Now you need to make alternating movements of the lower limbs up and down, with the lowest possible amplitude. Then inhale, dive, exhale underwater. This exercise should be performed for two minutes.

## **Characteristics of classes at different degrees.**

Doctors recommend the following swimming exercises:

1. Inhale and exhale in the water. The exercise is performed in a squatting position or in a lying position, face down, in the version with a squat it is necessary to keep on the edge of the side, head above the water. Take a deep breath, and when exhaling the person should be immersed in water. The frequency of performance is 4-6 times in one approach, but not more than 15 per lesson. Promotes breast development, improves lung ventilation.

2. Inhale through the mouth, exhale through the nose and mouth. The exercise should be performed in shallow water, holding the edge of the side or railing with your hands. Starting position: squat, head above the water, take a deep breath through your mouth and exhale quickly through your mouth and nose. The frequency of execution is 8-12 times. This exercise sets the right breathing and develops the respiratory muscles.

3. On the back with both hands. It is performed lying on the water face up in a horizontal position, hands on the body, the gaze is directed to the ceiling. During the exercise, the legs perform alternating swings, the arms are raised simultaneously. Inhale in the starting position, exhalation accompanies the swing. The hands are straight. To prevent the neck muscles from resetting, do not lift your head out of the water. The distance traveled is 50 meters. Promotes the development of the muscles of the trunk and respiratory system.

4. Swimming on the back, arms consistently. The starting position and the rules for performing the exercise correspond to the third paragraph. The differences in the performance of the removal of the hands, the strokes are performed sequentially, the inhalation and exhalation are distributed on the same principle, but for each hand separately. The movements are slow, breathing is even and deep. Distance 100 meters.

5. Swimming crawl is performed in a horizontal position facing the water. Particular attention should be paid to the technique of controlling breathing and exercise. Distance at a leisurely pace 25-100 meters, at a speed of 10-25 meters. Loads are determined by the level of training.

6. Swimming crawls. This exercise is performed on both the chest and the back. When performing, the rotation of the body should be avoided and the lower back should be kept in good shape. Distance 25-100 meters, depending on physical fitness, swimming is possible at a speed of not more than 20 meters in one approach. This exercise helps to develop the muscles of the limbs. Trains the respiratory muscles and develops endurance. Distance 100 meters.

7. Swimming butterfly. It is performed lying on your stomach horizontally in relation to the water. The hands should be carried in an even position and the blow with the arms bent. Inhalation is performed during the impact. Distance 100 meters.

8. Back with two hands at a distance of 100 meters. It is performed similarly to the above exercise, but at a distance of not more than 100 meters in one approach.

9. At the end of the workout you should repeat the breathing exercises.

### **Breathing exercises**

- Standing upright, make circular movements with outstretched arms 5 times, inhale, exhale into the water, repeat the inhalation and exhale. Repeat the exercise with swings in the opposite direction.
- While lying on the water, turn face down, hold on to the railing; to maintain a horizontal position, perform creeping movements with your feet. Exhale in the water. Duration 1-2 minutes
- While standing in the water, inhale, sit and exhale slowly in the water. Repeat 10-15 times.
- Jump out of the water as high as possible. Start with 3-5 times, increase the load gradually to 12 times.

To strengthen the back

Most of the exercises involve strengthening the muscles of the back, which is necessary to maintain posture. They include all kinds of bends, turns, squats, combined with movements of the arms and legs. They are aimed at strengthening the muscles and ensuring the activation of the muscles that are at rest. Let's list some of them:

- You will need a rubber ball for this exercise. Put your hands on the bottom. Squeeze the ball with your feet and lower your straight legs with the ball underwater. Repeat the exercise 12 times.
- Standing next to your chest in water, perform a spring swing on the side, your hands at this time can be in any position. The exercise is repeated at least 10 times.
- Step into the water up to your shoulders and rotate your legs underwater, 10 times each.

Aqua aerobics combines full strength training and gymnastics in water.

1. Enter the water next to your neck, stretch your arms in front of you (you can stay level), raise your legs evenly, trying to reach your hips with your hands.
2. Lying on your back in the water, helping to keep floating with your hands, and lifting and turning your legs consistently to the side is the best exercise for burning fat on the side.
3. Turn your back to the side, hold it with your hands, stretch your legs on the surface of the water and evenly raise and lower your legs. You can squeeze the ball with your limbs so that the movements of the legs are synchronized.
4. To lower the stomach, go deep enough into the water (legs do not reach the bottom), take the limbs under you, help hold with your hands. Now rotate your lower body 90 degrees in different directions. Performing 12 repetitions in 2 passes.
5. Enter the water to the shoulders, stretch your arms in front of you, raise your legs so that you reach the fingers of the crossed hand: with the left foot - right, with the right foot - the left hand. The limbs must be straight

Approximate special exercises performed at the beginning of the lesson for posture disorders

- 1. I. p. - I stand at a depth - water to the shoulders, hands in front, palms out. Draw a circle with your hands back, bend - inhale, return to I.P. - exhale. 3-5 times (Figs. 4.12, 7).
- 2. I. p. - lie on the water on your back, hold to the side with your hands, hands behind your head, squeeze a rubber circle (ball) between your legs. Drown the circle with your feet, hold in this position for a few seconds. 3-4 times (Fig. 4.12.2).
- 3. I. p. - standing with your back to the side at depth - water to the shoulders, hold with outstretched arms. Take a step forward with one foot without releasing your hands (you can

slide your hands on the railing), straighten your shoulders, bend, return to the SP. 3-4 times with each leg (Fig. 4.12.3).

### **Halliwick exercises**

Also called the 10-point program, it is a process in which the patient works on breathing, balance and control of movements, thus improving motor training and functional independence, making the person more able to initiate and perform difficult movements and activities. The Halliwick method is a program for learning to swim and move independently in water.

#### **1. Mental adaptability - exercises and games**

Exercise 1. With the help of an instructor or alone, swimmers walk in the water in different directions.

Exercise 2. Circular formation, forward movements to narrow the circle and backward movements to widen the circle.

Exercise 3. The Snake game. Walking in the water in a column like a snake in different directions.

Exercise 4. The game "Bicycle". The swimmer rides a bicycle with his feet, and his palms and forearms are on the palms and forearms of the instructor behind him.

Exercise 5. Breathing exercise - the swimmer makes bubbles on the surface of the water by blowing through the mouth or nose.

Exercise 6. Breathing exercise - alternating blows through the mouth and nose.

Exercise 7. Breathing exercise - the names of the swimmers are said when blowing in the water.

Exercise 8. Breathing exercise - immersing the whole face and head in the water with breathing.

#### **2. Control of sagittal rotation - exercises and games**

Exercise 9. Stepping aside (step with touch).

Exercise 10. The game "Bicycle" with a sudden change of direction.

Exercise 11. Circular movement by step with touch with a sudden change of direction.

Exercise 12. The game "Clock". The instructor holds the swimmer floating on his back by the hips and turns him to the right or left like a clock.

#### **3. Control of transverse rotation - exercises and games**

Exercise 13. The instructor holds the swimmer by the arms while he performs jumps with rotation control.

Exercise 14. From a sitting position (the swimmer seems to be sitting on a chair with arms outstretched) there is a transition to sailing on his stomach with his head above the water and returning to the starting position. The instructor holds the swimmer by the arms.

Exercise 15. From a sitting position you move to sailing on your stomach with your head in the water and return to the starting position with or without the help of an instructor.

Exercise 16. From a sitting position you move to sailing on your back with the help of the instructor, who holds the swimmer behind his shoulders.

Exercise 17. The game "Sun, wind and rain". Swimmers and instructors are arranged sequentially in a circular formation. At the word "Sun", swimmers switch to backstroke. At the word "Wind" they move to sail on their bellies and blow into the water. With the word "Rain" they perform successive movements with their feet in the same position.

Exercise 18. The game "Catch other people's steps". The instructors hold the swimmers by the shoulders, who float on their backs in a circle with the touch of their feet. At the "Now" sign, swimmers quickly make a transverse turn with the task of catching someone else's feet.

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## **6. Pushing - exercises and games**

Exercise 29. Holding the instructor's hands, the swimmer moves gradually from the shallower to the deeper part of the pool and back.

Exercise 30. The swimmer and the instructor hold each other by the shoulders, dive together and return to the surface of the water.

Exercise 31. The game "Pirate Treasure". Collect hoops (objects) from the bottom of the pool.

### **7. Balance at rest - exercises and games**

Exercise 32. Maintaining balance in a sitting position. If the body moves backwards, the head and arms must move forward. If the body moves to one side, the head and arms move to the other side.

Exercise 33. Maintaining balance when sailing on the back. If the legs sink, the arms are raised above the head or to the side.

Exercise 34. Maintaining balance in a vertical position. The head is raised back and the arms are to the side.

Exercise 35. Swimmers walk or run in the pool. At the instructor's signal, they stop quickly, trying to maintain a stable upright position.

Exercise 36. The swimmer is in an upright position. Performing various movements with his hands in the water near the swimmer, the instructor tries to upset his balance.

Exercise 37. The swimmer is in a sitting position. Performing various movements with his hands in the water near the swimmer, the instructor tries to upset his balance.

Exercise 38. The swimmer floats on his back. Performing various movements with his hands in the water near the swimmer, the instructor tries to upset his balance.

### **8. Swimming with the help of turbulence - exercises and games**

Exercise 39. The instructor is behind the swimmer and holds him by the shoulders. The swimmer moves backwards, floating on his back, assisted by the instructor, who walks backwards. The instructor then releases the swimmer, who continues the movement, floating on his back.

Exercise 40. The instructor is behind the swimmer and with the movements of his hands under his back and the swimmer's head creates turbulence, which moves the swimmer floating on his back on the surface of the water.

Exercise 41. Same as Exercise 40, but this time the instructor performs movements sequentially on both sides and these movements are followed by the swimmer floating on his back.

### **9. Slight progress - exercises and games**

Exercise 42. The swimmer swims on his back with small-amplitude paddles near his thighs. The instructor helps him by holding his legs.

Exercise 43. The swimmer swims on his back with the help of turbulent movements created by the instructor behind his head. After the established movement, the swimmer continues to swim independently with a small amplitude paddle near his thighs.

Exercise 44. The swimmer swims on his back on his own, performing small-amplitude paddles near his thighs.



## 10. Basic swimming by the Halliwick method

Exercise 45. The swimmer swims on his back with simultaneous paddles with his hands, which begin to paddle slightly above or at the level of the head and complete the paddle to the pelvis or thighs and then return above the water as close as possible to its surface in the starting position for a new raking.

Exercise 46. Same as the previous exercise with alternating leg movements as with the back swimming technique.

### SWIMMING TRAINING PROGRAM FOR 40 HOURS

The program includes exercises for each hour. The exercises are arranged in sequential numbers, as numbered in the previous part of the study material. Exercises refer to what needs to be done in the main part of the class. In the introductory and concluding part of the class, various shaping exercises are used, which are also used in other forms of physical exercises and activities. The number of repetitions of each exercise has not been determined, as individual dosing is planned depending on the swimmer's abilities. However, approximately each exercise should be repeated at least 10 times in one to two series.

Table 1. Training in swimming techniques

The sequence of the lesson	Crawl technique
16.	Exercise 1, Exercise 2, Exercise 3, Exercise 4, Exercise 5, Exercise 6.
17.	Exercise 2, Exercise 3, Exercise 4, Exercise 5, Exercise 6, Exercise 8, Exercise 9, Exercise 10,
18.	Exercise 4, Exercise 5, Exercise 7, Exercise 8, Exercise 9, Exercise 10,
19.	Exercise 4, Exercise 5, Exercise 9, Exercise 10, Exercise.
20.	Exercise 5, Exercise 7, Exercise 9, Exercise 10,
	Back technique
22.	Exercise 1, Exercise 2, Exercise 3, Exercise 4, Exercise 5
23.	Exercise 2, Exercise 3, Exercise 4, Exercise 5, Exercise 6, Exercise 8, Exercise 9, Exercise
24.	Exercise 3, Exercise 4, Exercise 5, Exercise 8, Exercise 9, Exercise 10
25.	Exercise 3, Exercise 6, Exercise 7, Exercise 9, Exercise 10, Exercise 14
26.	
27.	Exercise 3, Exercise 9, Exercise 10
	Breast technique
28.	Exercise 1, Exercise 2, Exercise 3, Exercise 4, Exercise 5,

29.	Exercise 2, Exercise 3, Exercise 5, Exercise 6, Exercise 7, Exercise 8, Exercise 9
30.	Exercise 2, Exercise 3, Exercise 5, Exercise 7, Exercise 8, Exercise 9, Exercise 10
31.	Exercise 3, Exercise 4, Exercise 9, Exercise 10
32.	Exercise 4, Exercise 5, Exercise 5, Exercise 10
33.	Exercise 4, Exercise 10

Table 2. Halliwick training

The sequence of the lesson	Halliwick Method
1.	Exercise 1, Exercise 2, Exercise 3, Exercise 4, Exercise 5, Exercise 6, Exercise 7, Exercise 8
2.	Exercise 3, Exercise 4, Exercise 8, Exercise 9, Exercise 10, Exercise 6, Exercise 11, Exercise 12
3.	Exercise 8, Exercise 10, Exercise 13, Exercise 14, Exercise 15, Exercise 16, Exercise 17, Exercise 18
4.	Exercise 8, Exercise 19, Exercise 20, Exercise 21, Exercise 22, Exercise 23, Exercise 24, Exercise 25
6.	Exercise 8, Exercise 11, Exercise 15, Exercise 16, Exercise 22, Exercise 26, Exercise 27, Exercise 28
7.	Exercise 8, Exercise 26, Exercise 27, Exercise 28, Exercise 29, Exercise 30, Exercise 31
8.	Exercise 8, Exercise 32, Exercise 33, Exercise 34, Exercise 35, Exercise 36, Exercise 37, Exercise 38
9.	Exercise 8, Exercise 36, Exercise 37, Exercise 38, Exercise 39, Exercise 40, Exercise 41
10.	Exercise 8, Exercise 36, Exercise 37, Exercise 38, Exercise 39, Exercise 40, Exercise 41
11.	Exercise 8, Exercise 39, Exercise 40, Exercise 41, Exercise 42, Exercise 43, Exercise 44
12.	Exercise 8, Exercise 42, Exercise 43, Exercise 44, Exercise 45, Exercise 46
13.	Exercise 8, Exercise 42, Exercise 43, Exercise 44, Exercise 45, Exercise 46
14.	Exercise 8, Exercise 10, Exercise 15, Exercise 21, Exercise 28, Exercise 30, Exercise 37, Exercise 40, Exercise 44, Exercise 45
15.	Exercise 7, Exercise 12, Exercise 16, Exercise 22, Exercise 28, Exercise 30, Exercise 38, Exercise 41, Exercise 44, Exercise 46

## PROGRAM FOR 20 HOURS OF THEORETICAL TRAINING

The theoretical communication program includes a series of lectures for 20 hours, which should provide an opportunity for interested coaches, swimming instructors, physical education teachers and beginners in this field to acquire basic knowledge in the field of swimming for people with spinal deformities and flat feet.

Table 3. Lectures on theoretical training

The sequence of the lesson	Names of lectures	Number of lessons
1.	Pathology of some forms of damage	2
2.	Paralympic swimming	1
3.	Classification in Paralympic swimming	2
4.	Crawl swimming technique	3
5.	Swimming technique back	3
6.	Swimming technique breaststroke	3
7.	Swimming technique dolphin	3
8.	Halliwick method	2
9.		1

### COVID-19

In March 2020, the World Health Organization (WHO) declared the coronavirus (COVID-19) a global pandemic. Little was known at the time about the structure of the virus, how it spread, or what types of conditions made infection more or less likely.

Especially on the effects of chlorine on the coronavirus. The article became SwimSwam's most read post since 2020.

As we reported at the time, the Executive Director of the Irish Health Service, essentially the equivalent of the United States Department of Health and Human Services, confirmed that the coronavirus could not be transmitted to drinking water and swimming pools, provided these environments were properly chlorinated.

As we enter 2021, when the coronavirus is present in everyone's lives for a little less than a year, more research has been conducted and more solid knowledge has been gained about everything from symptoms to strain variations to transmission. As such, additional data were collected specifically for aquatic environments and their effects on the coronavirus.

On July 15, 2020, the WHO published the results of its study related to the study of 3 main areas: 1) resistance / survival of coronavirus in water; 2) occurrence of coronavirus in the aquatic environment and 3) methods for recovery of coronavirus from water.

His study concluded that the coronavirus "appears to have low stability in the [aquatic] environment and is very sensitive to oxidants such as chlorine." In addition, the coronavirus appears to be "inactivated significantly more rapidly in water than undeveloped human enteric viruses with some transmission by water".

According to the results of the WHO study, the resistance of the coronavirus to chlorine is lower than that of bacteria. "It follows that current water disinfection practices (drinking water, wastewater, swimming pool water), effective against non-enveloped viruses and bacteria, are also expected to be effective against envelopes with viruses such as coronaviruses."

On the website of the Centers for Disease Control, whose updates are available until December 31, 2020, the organization states: "CDC is not aware of any scientific reports on the virus that causes the spread of COVID-19 among humans through water in swimming pools and hot baths or water areas. "

"In addition, the proper operation of public swimming pools, hot tubs and water areas (such as in a residential or community-owned complex) and water disinfection (with chlorine or bromine) must inactivate the virus."

Research at the US National Center for Biotechnology Information published another study on the aquatic environment in October 2020.

In its study evaluating favorable conditions for the survival of coronavirus (SARS-CoV-2) in the aquatic environment, the NCBI reaffirmed that the survival of the coronavirus in the aquatic environment is highly dependent on the actual characteristics of the water itself.

The report cites studies that suggest that coronaviruses are very sensitive to high temperatures and oxidants such as chlorine.

Last October, Swimming Canada's coronavirus management assessment team reported data from the two high-performance centers, as well as from non-HPC training centers, across the country.

The four HPC centers in Ontario, Vancouver, Victoria and Quebec conducted a total of 4,065 combined workouts, including 46 athletes from the time of swimming, resumed in the summer until September 30. During this time, there were no zero positive tests for COVID-19 from athletes and swimming staff at the HPC.

In addition, as of September 30, 157 head coaches from 460 Canadian clubs in Canada reported their club's coronavirus data through a Swimming Canada study. With 14,000 swimmers returning to training at these clubs as part of 167,000 individual training sessions, there have been no reports of COVID-19 spreading in the pools. The same goes for swimmers at Canadian universities. In total, with 282,000 completed individual training sessions, no transfer of training to a swimming club or university was registered / reported.

As we reported last November, the New Jersey Swimming Safety Alliance (NJSSA), a group formed to lobby the state governor to reopen indoor pools in June 2020, said a survey showed no reported results. from coronavirus infections in indoor pools state.

According to a press release, 44 establishments reported 212,641 people coming through their indoor pools with 0 infections at their facility.

It is important to note that this was a voluntary study and is not considered scientific, although it has become one of the most cited data in the battle to reopen or remain open pools around the world.

## **LITERATURE**

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