

**FEDERAL STATE AUTONOMOUS EDUCATIONAL INSTITUTION**

**OF HIGHER PROFESSIONAL EDUCATION**

**SOUTH URAL STATE UNIVERSITY**

**INSTITUTE OF SPORT**



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**Protocol**

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On the research of a patented product: "Device for the correction of the spine and paravertebral muscles" CORDUS "(CORDEN)" Koryukalov Yuri Igorevich

Koryukalov Yu.I. - Doctoral student of South Ural State University. Candidate of Biological Sciences.

Scientific leader of LLC "YARA" - a scientific and production enterprise for the development of high-tech equipment in the field of regenerative medicine.

1. In the period from 10.10.2015 to 30.10.2016, the research of the patented product: "Device for the correction of the spine and paravertebral muscles" Cordus "(CORDEN)" (hereinafter referred to as the device "Cordus "), (") was conducted at the Center for Sports Science of the Institute of Sport, Tourism and Service of SUSU. Chelyabinsk.

2. The purpose of the study is to evaluate the possibilities of using the above-mentioned product in the practice of rehabilitation and improvement of the functional state of the spine in persons with different spinal dysfunctions and back pain.

The following were used for the research:

- "Device for correction of the spine and paravertebral muscles" Cordus "(Corden)" in the following versions: device for correction of the spine and paravertebral muscles "Cordus Vibro" (Corden Vibro) with the function of slow vibration and the use of relaxing microcurrents - 3 pieces;

Device for correction of the spine and paravertebral muscles "Cordus" (Corden) - with neodymium magnets inside - 3 pcs;

**Product Description:**

Device "Cordus" (hereinafter referred to as the device) is intended for correction of posture, removal of joint-muscle pains, relaxation of deep paravertebral (near-vertebral) muscles, correction of the functional state of the spine. The device allows you to achieve unloading and correction alternately cervical, thoracic and lumbosacral spine, which leads to a reduction or elimination of soreness in the back and spine, increased mobility of all parts of the spine, relaxation of the paravertebral muscles, improving blood circulation in tissues and in internal organs administered through Spinal nervous system. In this case, the device allows selective action on any segment of the spinal column, both on the vertebral elements themselves and on the intervertebral discs. Also, the distance between the vertebrae increases, and thus the compression of intervertebral discs and spinal cord nerves is eliminated.

The device can be used both in preventive institutions and at home.

### Main research results:

"Device for correction of the spine and paravertebral muscles" Cordus "" was used in 22 individuals with complaints of pain in the neck and back (10 men and 12 women), aged 23 to 63 years.

The selected persons for the studies were informed about the technique of correction of the spine with the help of the device, existing contraindications to the above product, the procedure for correcting the spine was conducted after preliminary conversation and obtaining informed consent for the study. The rate of correction of the spine was 1 month.

№№ п/п	Sex, age	Symptoms, Diagnosis	Application and clinical effect
1.	M, 52	Lumbalia	Reducing pain, improving sleep
2	W, 49	Scoliosis of the 2nd degree	Reduction of pain syndrome in the collar zone, reduction of the angle of curvature from 16 to 12 degrees
3	W, 43	Pleiraptocular periarthrititis	Reduction of pain syndrome, improvement of mobility in the joint
4	M, 32	Protrusion in L3-L4 5mm	Disappearance of pain syndrome, reduction of protrusion to 3mm
5	M, 51	Intercostal neuralgia	Reduction of pain syndrome, improvement of rotation in the thoracic department
6	W, 43	Pain in the neck, cervical osteochondrosis	Reduction of pain syndrome, improvement of sleep quality
7	W, 38	Protrusion L4-L5 4mm, Pain in lower back and knee	The disappearance of pain in the lower back, a reduction in pain in the knee. Reduction of protrusion to 3 mm.
8	M, 49	Kifoscoliosis, thoracology	Reduction of pain syndrome, decrease in kyphosis, increase in growth by 2 cm
9	W, 34	Spondylosis, with painful radicular lumbar syndrome	Reduction of pain syndrome.
10	M, 26	Pear-shaped muscle syndrome	Reduction of pain syndrome.
11	W, 28	Kifoscoliosis, pain in the neck	Reduction of pain syndrome, reduction of the angle of curvature by 3 degrees
12	W, 36	Pain in the shoulder, tunnel syndrome	Reduction of pain syndrome, increase in amplitude of motion in the shoulder.
13	W, 44	Thoracalgia	Reduction of pain syndrome.
14	M, 54	Protrusion in C4-C5 3mm, pain in hand	Reduction of pain syndrome, restoration of mobility in the shoulder
15	W, 45	Osteochondrosis of the lumbar spine, with painful radicular syndrome	Reduction of pain syndrome, increased mobility in the lumbar spine
16	M, 45	Intercostal neuralgia	Reduction of pain syndrome.
18	W, 63	Pleiraptocular periarthrititis	Improvement of limb mobility, reduction of pain syndrome
19	M, 23	Pain in the back and neck with professional muscular tension	Expressed relaxing effect, improvement of well-being
20	W, 33	Scoliosis S-shaped	Reducing the angle of curvature, the disappearance of pain in the lower back

21	W,31	Asthenic syndrome	Improvement of well-being.
22	M, 29	Pain in the back and neck with professional muscular tension	The pronounced relaxing effect, the disappearance of pain in the back and neck.

Based on the studies carried out the following conclusion was made:

Almost all subjects noted the normalization of sleep, increased efficiency and a significant reduction in pain (Table 1). A quantitative assessment of the pain syndrome showed a significant reduction in the severity of pain or even its disappearance after a corrective course.

Subjects noted decreased stiffness in the cervical, thoracic and lumbar spine, improved mobility in the upper and lower extremities, normalization of cardiac activity, sleep, appetite. In this case, the disappearance of headaches was noted, the amplitude of movements in the joints increased; And the normalization of muscle tone in the back and epigastric region contributed to better posture. The procedure for correction of the zone of spasmodic muscles promoted a reduction in the compression of the intervertebral disc, which contributed to a decrease in protrusion by several mm.

The hardware effect was that the cone-shaped protuberances of the device, putting under the weight of the subject himself, the pressure on the group of muscles of the vertebral-motor segment located between the transverse processes of the vertebrae, led to such a relaxation that local traction between the two vertebrae appeared. This in turn contributed to the extension of the ligamentous apparatus in the vertebral-motor segment, and the microcurrents of Cordus vibro (Corden vibro) due to slow-frequency modulation contribute to the development of the state of relaxation.

Expert of the laboratory IST&S:



Doctor of biological sciences,

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The research was conducted by



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