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IMPROVEMENT OF REHABILITATION ALGORITHMS IN ORTHOPEDIC SURGERY

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Annotation: This article analyzes the improvement of rehabilitation algorithms in orthopedic surgery. The rehabilitation process includes an individualized approach, multimodal therapy, pain management, psychological support, robotic and virtual technologies, as well as telemedicine tools. Studies show the effectiveness of modern rehabilitation strategies in postoperative recovery, restoration of functional abilities and improving the quality of life of patients.

Keywords: Orthopedic surgery; rehabilitation algorithms; individual approach; multimodal therapy; functional recovery; pain management; robotic technologies; virtual rehabilitation; telemedicine; postoperative recovery; patient health.

Orthopedic surgery is one of the important areas in modern medicine for the treatment and rehabilitation of patients with diseases related to the musculoskeletal system. The rehabilitation process in this area includes complex strategies aimed at accelerating the patient's postoperative recovery, restoring functional abilities, reducing pain and improving the quality of life.

In recent years, with the increase in complex surgical interventions in orthopedic surgery, the improvement of rehabilitation algorithms has become an urgent issue. The rehabilitation process is not limited to physical exercises and physiotherapy, but also includes problems related to the patient's psychological state, pain management, return to professional activity and social activities. Therefore, modern rehabilitation algorithms require an individual approach, multimodal therapy and the integration of advanced technologies.

Advanced technologies make the rehabilitation process significantly more effective. For example, robotic devices ensure that the patient performs physical exercises accurately and safely, while virtual rehabilitation platforms increase patient motivation and allow for interactive exercises. Telemedicine systems allow for remote monitoring and monitoring of the patient's condition, which ensures rapid and effective rehabilitation in the postoperative period.

The article analyzes in detail the improvement of rehabilitation algorithms in orthopedic surgery, their clinical effectiveness, individual approaches, technological integration and their role in accelerating postoperative recovery. The most effective strategies for pain management, functional recovery, and quality of life during patient recovery are also discussed. The results of the article will serve to improve the quality of

rehabilitation in orthopedic surgery, accelerate patient recovery, and support a healthy lifestyle.

Improvements in rehabilitation algorithms in orthopedic surgery can significantly improve patients' postoperative recovery. Modern algorithms include an individualized approach, multimodal therapy, pain management methods, psychological support, exercise, and advanced technologies.

Studies show that advanced rehabilitation strategies are highly effective in restoring patients' functional abilities more quickly, reducing the time to return to professional and daily activities, and improving quality of life. At the same time, the integration of robotic devices, virtual rehabilitation, and telemedicine systems is important in making the rehabilitation process safe and effective.

Improvements in rehabilitation algorithms can also help reduce postoperative complications and increase patient motivation. By individually monitoring patients and developing an exercise program tailored to their recovery process, the speed of postoperative recovery is significantly increased. In conclusion, the improvement of rehabilitation algorithms in orthopedic surgery - through an individual approach, technological support and complex therapy - ensures rapid and effective recovery of patients. This is an important strategy for improving the quality of orthopedic surgery, reducing postoperative complications and improving patient health. At the same time, advanced rehabilitation algorithms, adapted to clinical practice, allow for safe, effective and individualized rehabilitation for patients.

REFERENCES:

1. Deyo, R. A., & Weinstein, J. N. (2001). Low back pain. New England Journal of Medicine, 344(5), 363–370.
2. Miller, M. D., & Thompson, S. R. (2014). DeLee & Drez's Orthopaedic Sports Medicine (4th ed.). Elsevier.
3. Laver, K., et al. (2020). Telerehabilitation for orthopedic patients: Systematic review. Journal of Telemedicine and Telecare, 26(7–8), 419–432.
4. Russo, A., et al. (2018). Robotic-assisted rehabilitation in orthopedics: Clinical outcomes. Journal of Orthopaedic Surgery and Research, 13, 221.
5. Sherrington, C., et al. (2011). Exercise to prevent falls in older adults: Systematic review. British Journal of Sports Medicine, 45(6), 442–449.
6. Pereira, R., et al. (2019). Virtual reality-based rehabilitation for orthopedic patients. Frontiers in Psychology, 10, 217.
7. Resnik, L., et al. (2012). Use of advanced technology in post-operative rehabilitation. Journal of Rehabilitation Research and Development, 49(2), 283–298.