

Review Article

# Effects of Physical Therapy in The Postoperative Period of Plastic Surgery: An Integrative Review

Joanna Viana Cacho Neta<sup>1</sup>, Wesley Barbosa Sales<sup>2\*</sup>, José Vinicius Bulhões da Silva<sup>3</sup> and Giovanna Pontes Pina Vidal<sup>4</sup>

<sup>1</sup>UNINASSAU (Graduated in Physical Therapy from the University Center Maurício de Nassau, João Pessoa, Paraíba, Brazil

<sup>2</sup>Federal University of Rio Grande do Norte (PhD student in Physical Therapy at the Federal University of Rio Grande do Norte), Brazil

<sup>3</sup>Graduated in Physical Therapy from the University Center of João Pessoa (Unipê), João Pessoa, Paraíba, Brazil

<sup>4</sup>Uninassau (MSc in Biotechnology and Innovation in Health, from the Anhanguera University of São Paulo - UNIAN), Brazil

## Abstract

**Introduction:** The practice of plastic surgery began in the field of reconstructive surgery, in an attempt to recover the functionality of some area of the body or give it a more natural appearance. In this sense, the role of the physical therapist is recommended in various aesthetic surgeries that, through physical therapy resources and techniques, promote tissue healing, reduce the appearance of adhesions, and reduce or eliminate pain, bruises, and edema.

**Objective:** to identify the effects of physical therapy in the postoperative period of plastic surgery.

**Methodology:** This is an integrative literature review, in which there will be a review of articles related to the study of the effects of physical therapy assistance applied to the postoperative period of plastic surgery. Articles related to the proposed theme were included, published between 2011 and 2024, available in full, without language restriction; in addition to theses, dissertations, and monographs. Exclusion criteria were literature review articles, articles or abstracts that had been published in conference proceedings; as well as letters from editors and preprints.

**Results and discussions:** it can show that physiotherapy in the postoperative period of plastic surgery is essential in reducing recovery time, reducing edema, improving the healing process, and preventing the risk of complications in the postoperative period. The main physiotherapeutic resources and techniques were: lymphatic drainage, ultrasound, radiofrequency, laser, and high frequency. Regarding plastic surgeries, the most frequent in the literature were: abdominoplasty, blepharoplasty, rhytidectomy, and liposuction.

**Final considerations:** Dermatofunctional physiotherapy is of paramount importance in the postoperative period of plastic surgery. It is essential in reducing recovery time and reducing the risks arising from surgery.

## Introduction

The practice of plastic surgery began in the field of reconstructive surgeries, in an attempt to recover the functionality of some area of the body or give it a more natural look [1]. During World War I, Sir Harold Delf Gillies treated several wounded with severe facial mutilations and abnormalities with rotational flap techniques, free bone grafts for jaw reconstruction, and tubular graft [2]. In the following years, plastic surgery developed and reached a broad scope

of action, to perform reconstructive procedures throughout the body, and to provide intraoperative care in other surgical areas, in addition to the growing practice of aesthetic or cosmetic plastic surgeries [3].

This medical specialty, cosmetic surgery, has gained prominence over the years due to socioeconomic factors, cultural changes, globalization, the massive influence of Western culture, and the influence of the media, social networks, and marketing on the subject [4,5]. All these

### More Information

**\*Address for correspondence:**

Wesley Barbosa Sales, Federal University of Rio Grande do Norte, Natal (RN), Brazil,  
Email: wesleysales8@gmail.com

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### ORCIDiDs

**Sales WB:** [orcid.org/0000-0002-6553-6266](https://orcid.org/0000-0002-6553-6266)

**Neta JVC:** [orcid.org/0000-0001-5867-7872](https://orcid.org/0000-0001-5867-7872)

**da Silva JVB:** [orcid.org/0009-0006-2404-0754](https://orcid.org/0009-0006-2404-0754)

**Vidal GPP:** [orcid.org/0000-0003-1689-3328](https://orcid.org/0000-0003-1689-3328)

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**Keywords:** Physiotherapy; Postoperative; Plastic surgery





factors have made plastic surgery a lucrative business, which necessarily deals with physical appearance [5]. As subjective as the motivations for undergoing cosmetic surgery may be, the main goal is to improve well-being and quality of life [6].

Given this expansion, it is important and necessary for the plastic surgeon to work in a multidisciplinary manner with other professionals who work in this context to achieve a more satisfactory final result [7]. In this sense, the role of a physical therapist is recommended in several aesthetic surgeries, especially breast correction (mammoplasty), breast implants, liposuction, abdominal correction (abdominoplasty), facial rejuvenation (rhytidoplasty or *facelift*), and eyelid contour correction (blepharoplasty) [8].

Aesthetic physiotherapy, also known as dermatofunctional physiotherapy, in one of its aspects, contributes effectively during the pre and postoperative periods of cosmetic plastic surgeries. It prevents possible complications, promoting better aesthetic results, and enabling a faster recovery process from surgeries [9]. Through the modalities of physiotherapy, it is possible to treat tissue damage that is naturally caused during surgery, acting to reduce edema, and preventing scar adhesions, flaccidity, pain, and muscle weakness [8,10].

Dermatofunctional physiotherapy is already recognized and disciplined as a specialty of physiotherapy through Resolutions No. 362/2009 and No. 394/2011 of COFFITO (Federal Council of Physical Therapy and Occupational Therapy), respectively [11,12]. Even though they are responsible for working in the recovery of cosmetic surgeries, there is a greater collaboration of plastic surgeons and physical therapists in terms of postoperative care, reconstructive plastic surgeries, rehabilitation, and post-acute treatment, such as in burn victims [13].

Given the above, the importance of physical therapy follow-up in the postoperative period of cosmetic surgeries is observed, and through this, the following research question arose: According to the scientific literature, what are the effects of physical therapy in the postoperative period of plastic surgeries? In this sense, the study aims to identify in the scientific literature the effects of physical therapy in the postoperative period of plastic surgeries.

## Materials and methods

Integrative review is a methodological approach with broad benefits for the scientific community, related to other types of reviews. It allows a rich and up-to-date knowledge about a given theme studied, as it analyzes, identifies, and synthesizes the results of studies by several authors related to the theme addressed, enabling the appropriate direction for practical applicability with a scientific foundation, being a useful method in the field of health [14].

The bibliographic survey was carried out between

January and October 2021, using the Latin American and Caribbean Health Sciences Literature (LILACS), PubMed, and Scientific Electronic Library Online (SCIELO) databases, through the descriptors, namely: physiotherapy modalities, dermatofunctional physiotherapy, postoperative, plastic surgery. For this, the Boolean operator "AND" was used to instrumentalize the search for publications. It is noteworthy that the aforementioned terms are descriptors standardized by the Descriptors in Health Sciences – DeCS.

The inclusion criteria were: experimental articles and clinical cases consistent with the theme of the study, written in Portuguese and English, published between 2011 and 2024; Available in full for free in an online collection. Incomplete referential articles and integrative, systematic, bibliographic, or meta-analysis reviews were excluded from the sample. The data were treated through descriptive statistics using Microsoft Word 2010 and Microsoft Office Excel 2010 to organize the data and obtain the simple frequencies, which were presented employing tables, analyzed, and discussed based on the relevant literature.

Flowchart 1 describes the procedure for searching the publications present in the literature, allowing the selection of articles that were later analyzed to contribute to this study. The abstracts of the articles were read and they were selected according to the filters applied and descriptors defined in the pre-established criteria to refine the sample. The data were organized into guiding questions, journal names, descriptors, country, year of publication, language, and research approach.

## Results and discussions

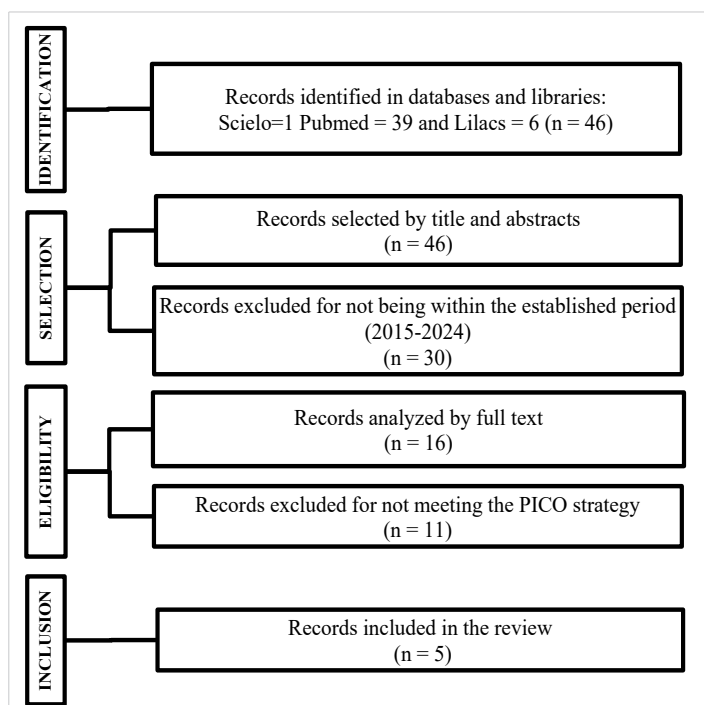
After cross-referencing the descriptors and their respective Boolean operators, 46 articles were identified, among these: 1 (SCIELO), 39 (PUBMED), and 6 (LILACS), these were evaluated by title and abstract, and soon after, 16 studies were pre-selected, which were read in full. 11 articles were excluded, leaving 5 articles that composed the results, discussions, and final considerations of this research.

Concerning Figure 1, the selected articles were observed in a critical-descriptive way, according to the methodology, originality, importance, and essential physical therapy performance with emphasis on the postoperative period of plastic surgery. Once the eligibility criteria were applied, 5 articles that met the pre-established criteria were selected for this review. In addition, all selected studies demonstrate the effects and applicability of physical therapy resources and techniques applied to the postoperative period of plastic surgery, evidencing the important role of physical therapy in this context. For a better visualization of the articles used, they are shown in Table 1.

Given the above, the search for aesthetic standards, beauty, and longevity is one of the main goals of individuals most concerned with body aesthetics. This is a goal sought

**Table 1:** List of articles selected for analysis (n = 5).

Title	Authors	Objective	Methodology	Results
Physical therapy protocol for the postoperative period of blepharoplasty.	Barros, et al. [15]	The purpose of this study is to investigate the role of the physical therapist in blepharoplasty and, subsequently, to develop and present a proposal for a physical therapy protocol for the postoperative period of patients undergoing blepharoplasty.	This is a descriptive, quantitative, and qualitative, exploratory research of the data collection type.	There was a greater demand from women over 60 years of age who sought physical therapy services after blepharoplasty surgery. The protocol applied varied according to the phase, whether it was inflammatory, proliferative, or remodeling. In all of them, lymphatic drainage was the most frequent physical therapy intervention.
Physical therapy protocol for the postoperative period liposuction.	Meyer, et al. [17]	To present a physical therapy protocol for the postoperative period of patients undergoing liposuction.	The descriptive character of the data collection type.	Based on the data found in the medical records and the possible complications, a Treatment protocol for the postoperative period of liposuction that follows the healing phases. In addition, among the treatment phases, lymphatic drainage emerges as one of the main tools of the physiotherapist.
Descriptive analysis of medical referral to dermatofunctional physical therapy treatments in the pre-and postoperative periods of cosmetic plastic surgeries.	Flores, Brum e Carvalho. [9]	Descriptively analyze the frequency of referral of patients from plastic surgeries to dermato-functional physiotherapy during the pre-and postoperative periods, as well as the main technical criterion used for such referrals.	The research followed a cross-sectional design	Physical therapy had a significant impact on the healing process and the improvement of well-being after the surgical procedure.
Benefits of Dermatofunctional Physiotherapy in the postoperative period of Rhytidoplasty or Facelift	Costa e Mejia. [16]	Identify that through functional dermato physiotherapy in the postoperative period, we can improve the result of the surgery and reduce the complaints caused by the surgical process.	The descriptive and qualitative study	More enlightening information should be offered to plastic surgeons regarding the potential of the treatments offered by the Physiotherapist Dermatofunctional, given the significant results in reducing edema and scar aesthetics.
Role of Physical Therapy in the postoperative period of abdominoplasty.	Sampaio. [18]	To verify the role of physical therapy in the postoperative period of abdominoplasty.	The descriptive and qualitative study	Indication of reconstructive cosmetic surgeries occurs when there is a moderate or large excess of fat or skin located in the abdominal region. In the postoperative period, the physical therapist will evaluate several factors that may be related to the patient's aesthetic and functional dysfunctions.



**Figure 1:** PRISMA diagram of the studies included in the integrative literature review. – João Pessoa, PB, Brazil, 2024.

by many over the years and from the most diverse cultures. The culture of aesthetic care and health has gained greater visibility after the broad concept of health, where it is defined as the complete and integral balance between psychological, physical, and social well-being, no longer being limited by the presence or absence of pathologies [15].

That said, aesthetic pathologies disharmonise the quality of life of many individuals, thus threatening the aesthetic integrity of the individual which can contribute to a significant decline in their mental, physical, and even social health, in some cases. The result of this is the individual's illness, which is essentially due to the impact on their self-esteem, providing psychosomatic changes [15,16].

According to the results of the study by Barros [15], women, especially those over 60 years of age, are the main public that seeks aesthetic surgical services. Among the main reasons for the search, the consequences resulting from aging stand out. In this context, blepharoplasty surgery is one of the most sought-after aesthetic procedures.

Dermatofunctional physiotherapy in cases of postoperative blepharoplasty is of utmost importance, given that edema is one of the main factors of indication. It reduces the visual field, and also impacts visual aesthetics, reducing the patient's self-esteem and quality of life [9].

That said, Meyer [17] and Barros [15] state that it is of paramount importance for the physical therapist to follow protocols regarding the inflammatory phase, i.e., the inflammatory phase, the proliferative, and modeling phases. In this way, the physical therapy treatment tends to be more assertive and resolute regarding the patient's complaint. Among the most used approaches in cases of post-surgical blepharoplasty, lymphatic drainage, kinesiotherapeutic exercises of the orbicularis muscles, frontal and lifting of the upper eyelid were highlighted [9].



Within this scenario, it was observed, according to the study by Costa and Mejia [16] that rhytidoplasty in women over 40 years of age is an aesthetic procedure of greater demand. In recent years, there has been an exponential growth in aesthetic procedures for easy rejuvenation. As a result, constant evolutions in this field of health have been demonstrated. However, any type of surgical procedure results in tissue damage, which, although well performed, can promote dysfunctions and functional limitations.

Therefore, the performance of physical therapy in the postoperative period of Rhytidoplasty is of paramount importance, essentially in reducing rest time, restoring functionality, and reducing pain and edema. Thus promoting the individual's return to their routine activities in a more optimized way and with lower risks of complications. Thus, the main physical therapy approaches are manual resources, such as lymphatic drainage, and electrothermophototherapeutic resources, such as microcurrent, high frequency, cryotherapy, and low-power laser [16].

Dermatofunctional physiotherapy is constituted and imbued with scientific knowledge, which promotes the effectiveness of the resources and techniques of the postoperative period of various plastic surgeries [18]. Within this context, the study by Flores, Brum, and Carvalho [9] aimed to descriptively analyze the frequency of referral of patients from plastic surgeries to dermatofunctional physiotherapy during the postoperative period.

The results of this study were of paramount importance for the empowerment of dermatofunctional physiotherapy, essentially due to the high rate of improvement in recovery time and prevention of postoperative risks. It was also noted that dermatofunctional physiotherapy is not yet fully known [15,17]. In the aforementioned study, 13% of plastic surgeons were unaware of the importance of physical therapy in the postoperative period. In addition, it was evidenced that 93% of plastic surgeons are directed to dermatofunctional physiotherapy. Demonstrating its importance and visibility in the recovery of patients [16].

Going against the above studies, the study by Sampaio [18] states that the search for the "perfect" body has led to a growing search for aesthetic and cosmetic procedures. Among these procedures, abdominoplasty has been one of the most sought-after surgical procedures, which mostly occur after pregnancy or for weight loss reasons. In addition, this feature may also be indicated in cases of aponeurotic flaccidity, diastasis recti, and hernias.

Within this scenario, abdominoplasty occurs by the surgical removal of the subcutaneous tissue, that is, the excess fat tissue in the abdominal region. Through a suprapubic incision and plication of the rectus abdominis muscles. Thus, the performance of physiotherapy is extremely important,

mainly due to the numerous risks that can arise from this intervention, such as hypertrophic and hypotrophic scars, retractions, infections, hematomas, seromas, fibrosis, scar adhesion, hyperpigmentation, and fat embolism [18].

The results of Sampaio's [18] studies show that when early physical therapy intervention is performed at the beginning of the postoperative period of abdominoplasty, the intervention is extremely effective in terms of adequate healing and optimization of the individual's return to the patient's daily activities. It was observed that lymphatic drainage, radiofrequency, and ultrasound are the most used resources in dermatofunctional physiotherapy. In addition, the healing process occurs more accelerated by the body with the use of low-frequency laser and ultrasound in surgical injuries, which provide a reduction in the injury and improvement in the healing process [15].

Finally, according to the results of the study by Barros [15] and in line with the aforementioned studies, the most used resource to reduce the consequences of liposuction in postoperative patients was ultrasound, followed by low-frequency laser and lymphatic drainage. However, in cases of scarring fibrosis, radiofrequency treatment, and endermotherapy were the resources applied for the treatment of these patients.

## Conclusion

The results of this study showed that physical therapy in the postoperative period of plastic surgery is essential to reduce recovery time, reduce edema, improve the healing process, and prevent the risk of postoperative complications. The main resources and physical therapy techniques were: lymphatic drainage, ultrasound, radiofrequency, laser, and high frequency. Concerning plastic surgeries, the most frequent in the literature were: abdominoplasty, blepharoplasty, rhytidoplasty, liposuction, and mammoplasty.

Finally, it is possible to identify that the effects of physical therapy in this scenario play an important role in aesthetic health and that unfortunately there is still a small number of scientific productions on this theme that emphasize the role of dermatofunctional physical therapy. Thus, this work stimulates the development of new studies with a similar theme.

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