

ISSN: 2164-5213 Volume 11, Number 3, July 2021



Modern Plastic Surgery

ISSN: 2164-5213



<https://www.scirp.org/journal/mps>

Journal Editorial Board

ISSN: 2164-5213 (Print) ISSN: 2164-5280 (Online)

<https://www.scirp.org/journal/mps>

Editor-in-Chief

Prof. Randal Tanh Hoang Pham

Stanford University, USA

Editorial Board

Dr. Dror Aizenbud

Rambam Health Care Campus and Technion Rappaport Faculty
of Medicine, Israel

Prof. Eckhard U. Alt

Tulane University, USA

Prof. Bernardo Hontanilla Calatayud

University of Navarra, Spain

Prof. Salvatore Carlucci

Institute for Cancer Research and Treatment of Turin, Italy

Dr. Nitin Chauhan

University of Toronto, Canada

Prof. Abdou Mohammed Abd Allah Darwish

Minia University, Egypt

Dr. Christopher R. Davis

Royal Free Hospital, UK

Dr. Alexander Dionyssopoulos

Aristotle University of Thessaloniki, Greece

Dr. Marek Dobke

University of California, USA

Prof. Almodather Mohamed Mohamed

Plastic and Reconstructive Surgery Department, Faculty of
Medicine, Mansoura University, Egypt

Mahmoud Elhadidy

Prof. Osama A. Farouk

Assiut University, Egypt

Prof. James D. Frame

Anglia Ruskin University, UK

Dr. Medhat Emil Habib

Zayed Military Hospital, Egypt

Dr. Fernando A. Herrera

Medical University of South Carolina, USA

Dr. Ali Izadpanah

McGill University Health Centre, Canada

Prof. Jih-Yang Ko

Chang Gung University, Chinese Taipei

Prof. David Daehwan Park

Daegu Catholic University Hospital, North Korea

Prof. Alberto Rancati

University of Buenos Aires, Argentina

Prof. Jose Humberto Cardoso Resende

Alfredo Nasser Colleges, UNIFAN, Brazil

Prof. David A. Sherris

University at Buffalo, State University of New York, USA

Prof. Zekeriya Tosun

Selcuk University, Turkey

Prof. Pedro Vidal

P. Universidad Católica de Chile & Air Force Hospital, Chile

Prof. Ronit Wollstein

University of Pittsburgh, USA

Table of Contents

Volume 11 Number 3

July 2021

**“Obese Workshop”: Retrospective Study of the Advantages,
Disease Preventions and Weight Losses**

J. H. C. Resende, M. C. Alves, A. C. Barbosa, D. de Bortoli Verderio, N. L. Sanchez,

S. de Castro Silva, A. J. Rodrigues, A. Y. V. Pitanga, E. S. F. Brasileiro.....49

Effect of Low Energy Far-Infrared Irradiation on Facial Skin for Healthy People

W. L. Chen, B. S. Deng, J. J. Pu.....57

**Recurrence of Lower Eyelid Fat Pads (Herniated Fat) after Blepharoplasty:
An Analysis of Different Operative Techniques**

R. Al Ashkar, S. Alboudi, A. Alhassanieh.....63

Modern Plastic Surgery (MPS)

Journal Information

SUBSCRIPTIONS

The *Modern Plastic Surgery* (Online at Scientific Research Publishing, <https://www.scirp.org/>) is published quarterly by Scientific Research Publishing, Inc., USA.

Subscription rates:

Print: \$79 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

SERVICES

Advertisements

Advertisement Sales Department, E-mail: service@scirp.org

Reprints (minimum quantity 100 copies)

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: sub@scirp.org

COPYRIGHT

Copyright and reuse rights for the front matter of the journal:

Copyright © 2021 by Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>

Copyright for individual papers of the journal:

Copyright © 2021 by author(s) and Scientific Research Publishing Inc.

Reuse rights for individual papers:

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

Disclaimer of liability

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:

E-mail: mps@scirp.org

“Obese Workshop”: Retrospective Study of the Advantages, Disease Preventions and Weight Losses

José Humberto Cardoso Resende*, Murilo Calil Alves#, Aline Correia Barbosa#, Débora de Bortoli Verderio#, Nathália Lima Sanchez#, Sabrina de Castro Silva#, Alexandre Jorge Rodrigues#, Anthony Yuri Viana Pitanga#, Emídio Silva Falcão Brasileiro†

UNIFAN, Aparecida de Goiania, Brasil

Email: *jresen99@hotmail.com

How to cite this paper: Resende, J.H.C., Alves, M.C., Barbosa, A.C., de Bortoli Verderio, D., Sanchez, N.L., de Castro Silva, S., Rodrigues, A.J., Pitanga, A.Y.V. and Brasileiro, E.S.F. (2021) “Obese Workshop”: Retrospective Study of the Advantages, Disease Preventions and Weight Losses. *Modern Plastic Surgery*, 11, 49-56.
<https://doi.org/10.4236/mps.2021.113006>

Received: April 26, 2021

Accepted: June 12, 2021

Published: June 15, 2021

Copyright © 2021 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).
<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Obesity is termed as the pathology defined by excess body weight due to the increase in adipocytes. It can be visceral, close to the omentum, mesentery, and subcutaneous, accumulated in the hypodermis. It is a disease that entails metabolic, respiratory, locomotor, and cardiovascular problems, type II diabetes, cancer, and even mental problems. Established by the Body Mass Index (BMI) and defined from the relationship between weight (kg) and height (m) of individuals. In numerical terms, a person is considered obese when the BMI is equal to or greater than 30 kg/m. This retrospective study took into account the more than 30 years that the coordinator of this work has devoted to morbidly obese people and all his 47 years of experience in medicine. The first obese person of his career was 41 years old and weighed 210 kg. As soon as she arrived at the hospital, she said: “Doctor, I am here, because I need to enter a ‘workshop’, to repair my body”. From that moment on, the name “workshop” became part of a fantastic project with obese people called “Obese Workshop”. Over time, the number of patients with this comorbidity has only increased, reaching, once, the point of speaking to 325 interested parties in a single day and in the same hall. In order to achieve satisfactory results, we have established a number of tests, by which we could diagnose several reasons that cause obesity. We selected randomly 20 patients of both sexes, morbidly obese, operated in 2013. We do not take into account age, race, creed, or social status.

*Publications Coordinator of the Faculty of Medicine of UNIFAN; Corresponding author

#Medical Students at UNIFAN

†General Coordinator of Research at UNIFAN

Keywords

Obesity, Obese, Arterial Hypertension, Diabetes, Bariatric Surgery, Weight Loss, Physical Exercises

1. Introduction

During the anamnesis of the patients and in the analysis of the 100 selected medical charts (70 women and 30 men), we observed several significant changes, which affect the bodily health as a whole (body and soul), thus affecting the professional, social and emotional life of each individual. We selected 20 morbidly obese patients, between 20 and 60 years old. Normally, the obese person, upon arriving at his/her cardiologist's office, invariably hears: You have to lose weight! We know that, with years of experience, even though there are hundreds of diets, it is not easy to lose weight. One of the objectives of the "Workshops" was precisely the exchange of experiences among the obese themselves and the multi-disciplinary relationship among the specialists, showing the advantages of weight loss and the disadvantages of remaining obese. Within the "Workshops", we established healthy occupational therapies, which included everything from music and singing to physical exercises, even if the manual, the important thing was not to stay inert, just depending on the ingested calories. We also showed the consequences that being overweight could have on them. The most frequent and common changes found were:

- 1) Dermal: Acanthosis nigricans, cellulite, acne, fungi, stretch marks, hirsutism, dark spots in the skin folds, and furunculosis [1].
- 2) Orthopedic: Incorrect posture, limitations of many movements, genu valgum, femoral epiphysiolysis, osteochondritis, arthritis, and flat feet [2].
- 3) Lipids: Increased serum triglyceride levels, low HDL-cholesterol, and variations up and down in serum LDL levels [3].
- 4) Hemogram (FBC): Few changes in general, 50% with Typical Lymphocytes below the desired level; 10% with alterations in TGO, TGP, FAL, and the Gamma Glutamyl Transferase—GGT (hepatic enzymes), where the "T" stands for Transaminase, the "G" Glutamic, the "O" Oxalacetic, the "P" Pyruvic, the "F" Phosphatase. Depending on the result, it means hepatic changes [4]. It was noticed two cases of alcoholism in male patients.
- 5) Fasting Glycemia: Above 120 mg/dl in 70% of cases and above 300 mg/dl [5] in 4 cases.
- 6) Arterial Hypertension: In 70% of men, blood pressure was above 160 × 100 mm/Hg; and, in 60% of women, it was above 150 × 100 mm/Hg [6].
- 7) Obstructive Sleep Apnea: Sleep disturbance. Defined as a respiratory pause during sleep, it was observed in 22 patients; and, in most of them, with reports of snoring [7].
- 8) Thyroid (TSH and free T4): Decreased thyroid hormones, requiring very

high L-thyroxine doses, associated with hypothyroidism in 8% of cases, mostly women. Increased Peptin and Insulin levels were noted [8].

9) Renal Function: In these selected cases, we did not observe diabetic nephropathies or hypertensive nephrosclerosis. In addition, there was no case of nephrolithiasis (formation of stones inside the urinary system), which had already been observed in other patients not participating in this study [9].

10) Exercise Test: We observed the short time that patients endured doing the exercises. Some arrhythmias were detected; and, for this reason, in almost all cases, we opted to suspend the test in order to avoid disorders [10].

11) Cardiovascular: We are aware of the high rate of cardiovascular diseases (CVD) in obese people. In Framingham's works, during his 26 years of experience with this type of patient, the occurrence of cardiovascular events and strokes was verified [11]. In almost all cases, we find problems with hypertension and diabetes [12].

12) Social Behavior: In addition to compromising health and quality of life, obesity interferes substantially in the following sectors: psychological, social isolation, loss of self-esteem, less education, as well as emotional, economic, clothing, deambulation, and early mortality-related problems [13].

The degree of satisfaction of both the physician and the patient was very high. We had cases of weight loss voluntarily, without bariatric surgery, with the loss of 80 to 103 kg of body mass. Of course, the "Workshop" helped to lose a few more pounds, so that the patients could, subsequently, undergo bariatric surgery or plastic surgeries for body relief, removing excess breasts and/or abdominal tissues, each in their own surgical time, which greatly reduced the potential risks of bariatric surgery. Who does not like to do good to others? For this reason, we have great memories of the meetings, which were full of gratitude. Many true friendships were made in this period.

2. Method

We have already recalled, in this manuscript, the endocrine and metabolic changes caused by obesity [14] [15] [16], their consequences, and the degree of obesity defined by BMI. It is a retrospective study, based on the experience and routine of 47 years of medicine and 30 years of working with morbidly obese patients of the coordinator of this work. The 100 medical charts were selected from a group of more than a thousand patients, who sought the hospital with the objective of finding a treatment for their pathology or just wanting to prevent it. The lectures were given on dates previously scheduled by the project coordinator and disseminated by the participants themselves. All 20 morbidly obese patients included in this manuscript were operated on. The average audience was 325 people (**Figure 1**), including patients in the preoperative phase of body relief surgeries, pre and postoperative bariatric surgery, and pre and postoperative plastic surgeries, some guests, besides professionals from different areas of health. Those who had already been operated on gave testimonies about their

histories before and after the surgeries, the problems caused by obesity and the advantages of weight loss (**Figure 2**). In order to accomplish the bariatric surgeries, different techniques were chosen by the responsible team, according to the analyzed case [17].

We considered as patients with dyslipidemia the people who manifested an altered value of CT, HDL, LDL, TG and BMI between 35 and 39.9 kg/m and greater than or equal to 50 kg/m [18]. In the “Obese Workshops”, during the lectures, the participants were always reminded that wherever a scalpel passes, there will always be a scar. Even so, almost everyone preferred the scar rather than the excess fat and skin. After the preliminary Workshop, that is, the one with more than 300 participants, we selected those who were already at the ideal weight, to undergo the Reconstructive Plastic Surgery. This surgery was only accomplished after they underwent a series of tests and passed all of them. We indicated only one surgery at a time, that is, when we accomplished a mastoplasty, we did not associate it with abdominal dermolipectomy or liposuction. With this decision, we never had a death or serious infections, which could cause any harm to the patient. We are aware that, after six hours of the open wound, it is considered contaminated.



Figure 1. Hall fully crowded with participants in one of the “Obese Workshops”.



Figure 2. Dr. José Humberto Resende with their slimmer patients.

In the preoperative period, the following laboratory tests were requested: complete blood count, coagulogram, urea, glucose, creatinine, cholesterol, and triglycerides. As for cases of breast surgery, we asked for mammography and ultrasound for all operated regions. Electrocardiogram with surgical risk was also requested in all cases. In the event of any type of alteration, we would suspend the surgery and reschedule it only after written authorization from the clinician.

All surgical items were sent to the Pathology Service, regardless of any suspicion. Without exception, patients signed an informed consent form prior to the surgery, which contained all necessary authorizations and information, including the use of photographs for the purpose of scientific publications. The team was previously chosen and we gave preference to all size 3 surgeries to begin at the first time. In obesity, we always opt for general anesthesia, with two anesthesiologists in the room, one holder, and one auxiliary. At the beginning of the surgery, we used the drug named Keflin[®] 1 g (cephalothin), venous, every two hours, in order to avoid infections of the lungs, skin, soft tissues, urinary system, blood and bones, as well as during the procedures. We avoid antibiotics in the postoperative period, unless there were any disorders or signs of infection in the postoperative period. In the immediate postoperative period, for each case, we opted for an ideal position [19], always in the sense of protecting the operated region. Semi-occlusive dressings were used and changed every day, except for what we call “Brown”, used in graft protectors, generally open on the fourth postoperative day. Before discharge, we took one photograph; and, as a follow-up, we took other ones, monthly, until we completed one year of surgery, when we took the last photograph [20]. In cases of abdomen and hip gigantism, we performed the dermolipectomy in the form of an anchor; and, after three months, we completed with liposuction on the sides of the body (**Figure 3** and **Figure 4**). We cannot deny the explicit satisfaction on the patients’ faces after conquering all these stages (**Figure 5**).

In the postoperative period of the selected patients, we observed 2 cases of temporary hematomas, 1 case of corrected dehiscence and 1 case of drained lipolysis. There was no case of severe complication, because we chose to do one

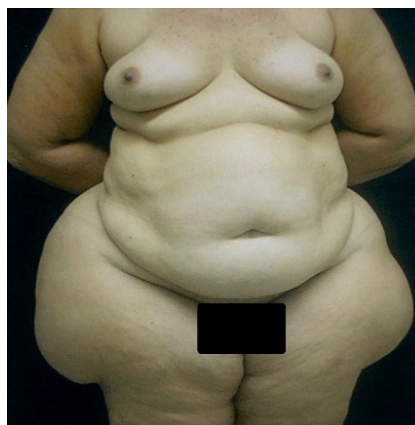


Figure 3. Preoperative front view.



Figure 4. Postoperative front view.



Figure 5. The joy on the participants' faces after their conquests.

operation at a time. Each surgical time was a maximum of 3 hours. Patients were followed up for one year [21].

3. Discussion

In addition to the fact that the obese person has various pathologies, interfering with the functioning of several organs, what we observed most were the physical discomfort caused by body deformity and the difficulty in social and intimate relationships. The main complaint varied from patient to patient, but the predominance of the verb “to be” was notorious, such as: “I am unhappy”, “I am fat”, “I am ugly”, “I am deformed”. These phrases were repeated over and over again in all anamneses. With very few exceptions, we heard: “I am happy, just like that”, “I am treated very well by my husband”.

In Brazil, we have few hospitals in which this pathology is treated as a priority. With all our experience in this specialty, we can say that it is very difficult to lose weight by any method. Perhaps, in the “Obese Workshops”, we find a degree of solidarity, encouragement and support, which has reached many people and

their dreams of wanting and being able to be thin and have facilitations wherever they go. We have been successful in many cases, but, among physicians, the question remains: Why, after being so close to victory, did so many give up? The suggestion of an open field for future multidisciplinary research remains.

4. Conclusions

The general observation is that, after losing 5 kg of body weight, all patients already had testimonies of significant improvement in arterial hypertension and diabetes. At the end of the tunnel, a light of hope appears that had already been forgotten by them. A simple act of wearing old pants, which had been tight before, or a brassiere that she (patient) had not worn in years, caused a high degree of happiness.

In this conclusion, we can say that if we do not decrease the amount of calories consumed in a day, we will never achieve weight loss. There are hundreds of theoretically tested regimes; however, in all of them, there must be a reduction in the consumed food. Furthermore, in order to achieve any goal, we have to say the phrase: "I want."

Our desire is to take the "Obese Workshop" to the whole world, where, with the truth, we can prevent the obese person from becoming the morbidly obese person, and society from rejecting them, even knowing the need for multiple reconstructive plastic surgeries.

Acknowledgements

Work held in partnership with Alfredo Nasser University (UNIFAN) with Clínica Brasil.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Lotufo, P.A. (1998) Early Mortality from Heart Disease in Brazil. Comparison with Other Countries. *Arq Bras Cardiol*, **70**, 321-325.
<https://doi.org/10.1590/S0066-782X1998000500003>
- [2] Monteiro, C.A., D'A Benicio, M.H., Conde, W.L. and Popkin, B.M. (2000) Shifting Obesity Trends in Brazil. *European Journal of Clinical Nutrition*, **4**, 342-346.
<https://doi.org/10.1038/sj.ejcn.1600960>
- [3] Austin, M.A. (1999) Epidemiology of Hypertriglyceridemia and Cardiovascular Disease. *American Journal of Cardiology*, **83**, 13-16.
[https://doi.org/10.1016/S0002-9149\(99\)00209-X](https://doi.org/10.1016/S0002-9149(99)00209-X)
- [4] Halpern, A. and Mancini, M.C. (2001) Obesidade. *Revista Brasileira de Medicina do Esporte*, 57-77.
- [5] Sasson, Z., Rasooly, Y., Bhesania, T. and Rasooly, I. (1993) Insulin Resistance is an Important Determinant of Left Ventricular Mass in Obese. *Circulation*, **88**, 1431-1436. <https://doi.org/10.1161/01.CIR.88.4.1431>

- [6] Benotti, P.N., Bistran, B., Benotti, J.R., Blackburn, G. and Forse, R.A. (1992) Heart Disease and Hypertension in Severe Obesity: The Benefits of Weight Reduction. *The American Journal of Clinical Nutrition*, **55**, 586-590. <https://doi.org/10.1093/ajcn/55.2.586s>
- [7] Hla, K.M., Young, T.B., Bidwell, T., Palta, M., Skatrud, J.B. and Dempsey, J. (1994) Sleep Apnea and Hypertension: A Population Based Study. *Annals of Internal Medicine*, **120**, 382-388. <https://doi.org/10.7326/0003-4819-120-5-199403010-00005>
- [8] Maslowska, M.H., Sniderman, A.D., MacLean, L.D. and Cianflone, K. (1993) Regional Differences in Triacylglycerol Synthesis in Adipose Tissue. *Journal of Lipid Research*, **34**, 219-228. [https://doi.org/10.1016/S0022-2275\(20\)40749-7](https://doi.org/10.1016/S0022-2275(20)40749-7)
- [9] Montague, C.T., Prins, J.B., Sanders, L., Zhang, J., Sewter, C.P., Digby, J., et al. (1998) Depot-Related Gene Expression in Human Subcutaneous and Omental Adipocytes. *Diabetes*, **47**, 1384-1391. <https://doi.org/10.2337/diabetes.47.9.1384>
- [10] Ferreira, S.R.G., Franco, L.J., Gimeno, S.G.A., Iochida, L.C. and Iunes, M. (1997) Is Insulin or Its Precursor. Independently Associated to Hypertension? An Epidemiological Study in Japanese-Brazilians. *Hypertension*, **30**, 641-645. <https://doi.org/10.1161/01.HYP.30.3.641>
- [11] Rosenfeld, J. and Shohat, J. (1983) Obesity and Hypertension. In: Gross, F. and Strasser, T., Eds., *Mild Hypertension: Recent Advances*, New York, Raven Press, 197-208.
- [12] Dalsin, C., Schemes, C. and Pacheco, B. (2015) Women, Obesity and Fashion: A Case Study in the City of Carlos Barbosa, RS. <https://www.efdeportes.com/efd204/mulher-obesidade-e-moda-um-estudo.htm>
- [13] Dubois, J.C.L. (1978) Anorexia Nervosa in Men: Obsession with "Weith identity". Some Nosological and Therapeutic Considerations. *Annalés Médico Psychologiques*, **136**, 619-624.
- [14] Cercato, C., Mancini, M.C., Arguello, A.M.C., Passos, V.Q., Villares, S.M.F. and Halpern, A. (2004) Systemic Hypertension, Diabetes Mellitus, and Dislipidemia in Relation to Body Mass Index: Evaluation of a Brazilian Population. *Revista do Hospital das Clínicas*, **59**, 113-118. <https://doi.org/10.1590/S0041-87812004000300004>
- [15] Kral, J.G. (1985) Morbid Obesity and Related Health Risks. *Annals of Internal Medicine*, **103**, 1043-1047. <https://doi.org/10.7326/0003-4819-103-6-1043>
- [16] Stubbs, R.S. and Wickremesekera, S.K. (2002) Insulin Resistance in Severely Obese Links with Metabolic Co-Morbidities. *Obesity Surgery*, **12**, 343-348. <https://doi.org/10.1381/096089202321088110>
- [17] Capella, J.F., Capella, R.F., Mandac, H. and Nath, P. (1991) Vertical Banded Gastroplasty Gastric Bypass: Preliminary Report. *Obesity Surgery*, **1**, 389-395. <https://doi.org/10.1381/096089291765560782>
- [18] Anderson, K.M., Castelli, W.P. and Levy, D. (1987) Cholesterol and Mortality. *JAMA*, **257**, 2176-2180. <https://doi.org/10.1001/jama.1987.03390160062027>
- [19] Resende, J.H.C. (2003) Gigantomasty. Plastic Surgery: Fundamentals and Art—Aesthetic Surgery. Medical and Scientific Publisher, Rio de Janeiro, 555-561.
- [20] Resende, J.H.C. (2008) Resende's Technique for Correcting Gigantomasty—Body Relief Surgery, Treated Plastic Surgery in Obesity. Editora Rubio, Rio de Janeiro, 357-365.
- [21] Resende, J.H.C., de Moura, Á.I., Mariano, A.C.A., Silva, H.K., Silva, H.L., Campos, I.A., de Lima, L.C.F., Gabriel, M.B. and Silverio, W.O. (2019) Gigantomasty in Female Workers: "Public Health Cases". *Modern Plastic Surgery*, **9**, 1-7. <https://doi.org/10.4236/mps.2019.91001>

Effect of Low Energy Far-Infrared Irradiation on Facial Skin for Healthy People

Wenliang Chen^{1*}, Bingshui Deng², Jingjing Pu¹

¹Grahope New Materials Technologies Inc. (GNM), Shenzhen, China

²Union Medical College Shenzhen Hospital of Huazhong University of Science and Technology, Shenzhen, China

Email: *chenw917@126.com

How to cite this paper: Chen, W.L., Deng, B.S. and Pu, J.J. (2021) Effect of Low Energy Far-Infrared Irradiation on Facial Skin for Healthy People. *Modern Plastic Surgery*, 11, 57-62.

<https://doi.org/10.4236/mps.2021.113007>

Received: April 13, 2021

Accepted: July 4, 2021

Published: July 7, 2021

Copyright © 2021 by author(s) and Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Objective: Utilizing VISIA skin tester to quantitatively evaluate the effect of low energy far-infrared irradiation on healthy people's facial skin. **Methods:** 60 volunteers were selected in hospital from September 2019 to June 2020, and the total score of face, skin spots, texture, wrinkles and pores were observed before and after low energy far-infrared irradiation treatment with VISIA skin tester. **Results:** After 2 weeks of low energy far-infrared irradiation treatment, the total skin score of volunteers increased significantly ($P < 0.01$). In the itemized statistics, the moisture value, stain value and wrinkle value increased significantly ($P < 0.05$). **Conclusion:** Low energy far-infrared irradiation can significantly improve the facial skin quality of healthy people.

Keywords

Low Energy Far-Infrared Face Irradiation, Skin Quality Improvement

1. Introduction

As the main barrier between the internal and external environment of human body, human skin is not only the largest organ of human body, but also the main organ of visible aging changes of human body. Its physiological characteristics and pathological changes often involve the influence of age, light, health status and other factors [1]. It is the public's unremitting pursuit to have a healthy, whitening skin that is commensurate with the physiological age. The study of skin texture has important aesthetic and clinical significance.

In recent years, with the rapid development of medical science and technology, the research on the improvement of skin texture by phototherapy becomes the center point. A certain band of the far-infrared light component can produce biological effects such as photothermal effect, promoting the remodeling of col-

lagen fibers, superficial spots, skin metabolism, and skin texture, therefore achieving the effect of brightening skin color [2].

In this study, we used low energy far-infrared light to irradiate human facial skin, and introduced advanced VISIA skin tester [3] to detect and analyze facial skin, and accurately evaluate the efficacy.

2. Materials and methods

2.1. General Information

60 volunteers from September 2019 to June 2020 were selected. Half of them are male and half are female, aged from 24 to 45 years old. The average age of male was 34.2 ± 3.7 years old, and the average age of female was 31.6 ± 4.2 years old. These volunteers were divided into three groups: Group A: low energy far-infrared radiation with mask; Group B: low energy far-infrared radiation without mask; Group C work as a control group, participants clean their face with water without any other interventions.

According to the comparison on the differences of ages and the states of facial skin of three groups of subjects, the differences had no statistical significance ($P > 0.05$), showing that the baselines of three groups of subjects were balanced and had comparability.

The ethical permission for this study has been approved by the Hospital Health Research Ethics Committee.

2.2. Exclusion Criteria

Patients with severe skin diseases on the face or undergoing other treatments; patients sensitive to light or taking photosensitive drugs in the past six months; patients with severe endocrine diseases or chronic diseases affecting their skin conditions (such as anemia, systemic lupus erythematosus, etc.); pregnant or lactating women.

2.3. Instruments and Materials

Graphene F.I.R heating facial mask (A new product from Grahope New Materials Technologies Inc. Hereinafter referred to as G-MASK), which can emit low-energy far-infrared light to irradiate human skin; VISIA skin tester (Shenzhen Yiyuan Intelligent Technology Co., Ltd.), which can use advanced optical imaging and software technology to detect and analysis of epidermal spots, pores, wrinkles and skin texture, subcutaneous vascular and pigmented lesions, etc.; Medical facial mask (Guangzhou Chuang Er biotechnology Co., Ltd., batch number 1180716A).

2.4. Method

1) Before using the G-MASK, the volunteers removed all the cosmetics on their face, cleaned their face with clean water, wiped out the water and kept quiet for about 5 minutes. After the faces were clean and dry, volunteers used the vi-

sion skin detector to test the skin. During the detection, the room temperature was kept at about 22°C and the relative humidity was about 50%. The facial image information (spots, wrinkles, texture, pores, etc) of the volunteers were obtained and analyzed.

2) The participants used G-MASK daily with the following steps: a) Routine cleansing of the patient for 5 minutes, wipe out the skin until the water became invisible; b) Lay on supine position, wear G-MASK (treatment group A should apply the facial mask beforehand); c) Turn on the G-MASK at mid-level for 20 minutes; d) After treatment, turn off the G-MASK (treatment group A should remove the facial mask beforehand), then massage the face and eye rim around gently for 2-3 minutes; e) Repeat the steps once a day, every 14 days will count as one treatment, after the treatment, the VISIA skin tester will detect the skin status in the following 20 days.

3) Attention during the use of G-MASK: a) Clean the face with warm water at about 30°C without soap, facial cleanser, shower gel and other irritant substances, and wash gently to avoid rough massage; b) Avoid spicy and irritant food, alcohol and tobacco; c) Participants need to keep a regular healthy schedule, do not stay up late; d) Pay attention to sunscreen and moisturizing.

4) Evaluate the use effect based on the result of VISIA skin tester.

5) Statistical analysis: SPSS 19.0 was used to analyze the data, and paired t-test was used for the observation indexes, $P < 0.05$ was considered as statistically significant.

3. Results and Analysis

3.1. The Improvement of Skin Appearance in Each Group before and after the Treatment

Self-evaluation or others' evaluation was used to observe the improvement of skin appearance before and after the experience. The results are shown in **Table 1**.

Regardless of self-evaluation group or evaluation by others group, the improvement rates of two G-MASK groups (a, b) were better than the control group (c). In addition, there were males in the G-MASK group whose skin color improved from dull to natural skin color, but none in the other groups. The test of G-MASK shows a good trend of skin improvement, which is mainly reflected in that the skin color of the test becomes ruddy and fair, and the wrinkles are reduced.

Table 1. The improvement of skin appearance in each group before and after the treatment (the third week after 2 weeks of treatment).

evaluation group	Self-evaluation		Evaluation by others	
	Feel better	No improvement	Feel better	No improvement
A	14	5	14	5
B	12	7	13	6
C	3	17	2	18

3.2. Evaluation of Curative Effect before and after Treatment

The facial values of volunteers in each group were measured by VISIA skin tester to evaluate the use effect. The results are shown in **Table 2**.

According to the test results of VISIA skin tester, there was no significant change in the total skin score after 2 weeks of treatment. However, compared with the initial value in the same group, the measured value on the 21st day after treatment in group A1 and group B1 improved significantly, and the difference was statistically significant ($P < 0.01$). Group B1 and group B2 also improved, the difference was statistically significant ($P < 0.05$). There was no change in control group C ($P > 0.05$). The difference between A1 and B1, A2 and B2 was statistically significant ($P < 0.05$). The improvement degree of group A was better than that of group B.

It was suggested that the skin quality of group A and group B treated by G-MASK low energy radiation group were significantly improved compared with those of blank control group on the 21st day after treatment, and group A (low energy far-infrared radiation plus mask group) improved better than group B (low energy far-infrared radiation group).

The facial parameters in the skin image, moisture, stains, wrinkles, etc. were all improved after 35 days of treatment, and the difference was significant; there was no obvious change in UV stains.

3.3. Occurrence of Adverse Reactions

There were 3 volunteers with slight burning sensation on their faces during use, 2 volunteers quit and 1 volunteer continued. No blister, burn, pigmentation, depigmentation and other adverse reactions were found during the test.

One case in group B1 (simple G-MASK, male group) had more acne spots; one case in group B2 (simple G-MASK, female group) had worse complexion.

4. Discussion

Generally speaking, the factors of skin aging can be divided into endogenous factors and exogenous factors. Endogenous factors include genetic genes, free radicals, immunity and other factors [4]. Exogenous factors include ultraviolet radiation, smoking, air pollution, etc [5]. Among them, photoaging caused by

Table 2. Test results of vision skin tester after two weeks of using G-MASK ($\bar{x} \pm s$).

score	group	A		B		C	
		A1 (male)	A2 (female)	B1 (male)	B2 (female)	C1 (male)	C2 (female)
Before treatment		43.2 $\pm$ 2.2	58.3 $\pm$ 2.7	42.1 $\pm$ 3.4	57.3 $\pm$ 1.9	44.1 $\pm$ 2.8	56.2 $\pm$ 3.6
After 2 weeks of treatment		45.1 $\pm$ 3.1	59.1 $\pm$ 1.9	44.3 $\pm$ 2.7	59.7 $\pm$ 2.8	43.6 $\pm$ 3.3	57.1 $\pm$ 2.6
On the 21 st day after 2 weeks of treatment		51.2 $\pm$ 3.5** Δ	68.6 $\pm$ 3.8** Δ	48.2 $\pm$ 3.8*	64.2 $\pm$ 2.4*	45.2 $\pm$ 3.4	58.6 $\pm$ 3.3

Note 1: There was 1 case quit in each of group A1 and group B1. Note 2: The measured values were compared with the initial values of each group, **means $P < 0.01$, *means $P < 0.05$. Δ means A1 compared with B1, A2 compared with B2, $P < 0.05$.

ultraviolet radiation is an important cause for skin aging [6].

VISIA skin tester is a good tool used to quantify the state of different layers of skin through the absorption and refraction of different wavelength light sources, which can objectively reflect the face state of patients. It can be used as a quantitative measurement standard of the curative effect of light, and has certain significance for diagnosis, guiding treatment methods and evaluating curative effect [7] [8] [9] [10].

In this paper, 40 volunteers were treated with facial irradiation by G-MASK. The results of VISIA skin test showed that after a course of treatment (2 weeks), there was no statistical improvement in the total skin score. But in the follow-up test on the 21st day, the score of the G-MASK group (A, B group) improved significantly. The main reason was that the regeneration cycle of human skin was generally 28 days, and the observed repair effect was delayed.

Totally, the test of the G-MASK, whether from the self-evaluation, the evaluation by others, or the change of the total score of the test, showed that the G-MASK group had a good skin improvement effect, and better than the blank control groups. All this may be related to the low energy far-infrared emitted by graphene material, which can promote facial blood circulation and promote the absorption of facial mask emulsion. In addition, there was no obvious discomfort during the use of the G-MASK. In the process of mass use in the future, the safety is guaranteed except for the people with sensitive skin.

Pure graphene material has low starting voltage (3 - 5 V), and can emit low energy far-infrared ray. The peak of wavelength is about 9 μ m, which is easy to produce resonance effect with human body. The far-infrared band in this range can effectively block the transmission of red visible light, ultraviolet light, etc., and eliminate the possible human skin damage caused by other spectral bands. When far-infrared rays act on the skin, a series of biological effects are produced. For example, it can cause the vibration of water molecules inside and outside the cells of the body, turn the large molecular water mass (easy to cause human aging) into small molecular water mass; activate the protein in the body, activate the cells; it can make the microvascular dilation, accelerate the blood flow, improve the microcirculation disorder; it can improve the blood and oxygen supply of the cell tissue, accelerate the absorption and dissipation of inflammatory exudates; it can improve the metabolism, and improve the skin health [11] [12] [13].

In conclusion, low energy far-infrared irradiation of the G-MASK has a good effect on improving the facial skin of healthy people. We observed the skin improvement of the face after 2 weeks of pure graphene low energy far-infrared irradiation accurately through the VISIA skin tester. From the total score changes of volunteers before and after test, as well as the sub effect, such as evaluation of spots, wrinkles, textures, pores and other aspects, etc. we can provide better feedback to doctors and patients, and improve the treatment compliance and trust from patients.

On the other hand, this experiment was small randomized controlled trial. The sample size was small, thus the power of test was limit, thereby affecting the intensity of argumentation on the true result. It is expected to be improved in the subsequent research.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Guinot, C., Malvy, D.J., Ambroisine, L., *et al.* (2002) Relative Contribution of Intrinsic Vs Extrinsic Factors to Skin Aging as Determined by a Validated Skin Age Score. *Archives of Dermatology*, **138**, 1454-1460. <https://doi.org/10.1001/archderm.138.11.1454>
- [2] Chan, C.S., Saeedi, N., Mickle, C., *et al.* (2013) Combined Treatment for Facial Rejuvenation Using an Optimized Pulsed Light Source Followed by a Fractional Non-Ablative Laser. *Lasers in Surgery and Medicine*, **45**, 405-409. <https://doi.org/10.1002/lsm.22162>
- [3] Liu, Y.H., Tang, J.W. and Li, X.Z. (2018) Evaluation of the Efficacy of Whitening Cosmetics by Combined Non-Invasive Skin Tester and IPP Image Analysis System. *Chinese Journal of Aesthetic Medicine*, **27**, 100-104.
- [4] Makrantonaki, E., Bekou, V. and Zouboulis, C.C. (2012) Genetics and Skin Aging. *Dermato-Endocrinology*, **4**, 280-284. <https://doi.org/10.4161/derm.22372>
- [5] Ichibori, R., Fujiwara, T., Tanigawa, T., *et al.* (2014) Objective Assessment of Facial Skin Aging and the Associated Environmental Factors in Japanese Monozygotic Twins. *Journal of Cosmetic Dermatology*, **13**, 158-163. <https://doi.org/10.1111/jocd.12081>
- [6] Ryu, J.H., Seo, Y.K., Boo, Y.C., *et al.* (2014) A Quantitative Evaluation Method of Skin Texture Affected by Skin Ageing Using Replica Images of the Cheek. *International Journal of Cosmetic Science*, **36**, 247-252. <https://doi.org/10.1111/ics.12120>
- [7] FU, J., SONG, P., WANG, Y.T., *et al.* (2010) Quantitative Evaluation of Various Skin Characteristics by VISIA Skin Tester. *Chinese Journal of Laser Medicine & Surgery*, **19**, 367.
- [8] Guo, Y., Zhu, S.P., Shen, J.C., *et al.* (2015) Quantitative Evaluation of Facial Skin Aging Treated by Intense Pulsed Light Combined with Injection Rhytidectomy by Vision. *Chinese Journal of Aesthetic Medicine*, **24**, 60-62.
- [9] Feng, Y.Y., Guan, Y.Y. and Huang, L.P. (2017) The Role of VISIA Skin Tester in the Assessment of Melasma. *Journal of Practical Dermatology*, **10**, 340-345.
- [10] Sanches Silveira, J.E. and Myaki Pedroso, DM. (2014) UV Light and Skin Aging. *Reviews on Environmental Health*, **29**, 243-254.
- [11] Wang, Y. (2014) Clinical Application and Mechanism of Far-Infrared in Biomedicine. *Science & Technology Review*, **32**, 80-84.
- [12] Yu, S., Chiu, J., Yang, S., *et al.* (2006) Biological Effect of Far-Infrared Therapy on Increasing Skin Microcirculation in Rats. *Photodermatol Photoimmunol Photomed*, **22**, 78-86. <https://doi.org/10.1111/j.1600-0781.2006.00208.x>
- [13] Inoue, S., and Kabaya, M. (1989) Biological Activities Caused by Far-infrared Radiation. *International Journal of Biometeorology*, **33**, 145-150.

Recurrence of Lower Eyelid Fat Pads (Herniated Fat) after Blepharoplasty: An Analysis of Different Operative Techniques

Riham Al Ashkar, Sinan Alboudi*, Anwar Alhassanieh

Department of Plastic Surgery, Faculty of Medicine, Damascus University, Damascus, Syrian Arab Republic

Email: *sinan986@yahoo.com, dranwar_h@yahoo.com, riham.alashkar@gmail.com

How to cite this paper: Al Ashkar, R., Alboudi, S. and Alhassanieh, A. (2021) Recurrence of Lower Eyelid Fat Pads (Herniated Fat) after Blepharoplasty: An Analysis of Different Operative Techniques. *Modern Plastic Surgery*, 11, 63-69.

<https://doi.org/10.4236/mps.2021.113008>

Received: June 9, 2021

Accepted: July 6, 2021

Published: July 9, 2021

Copyright © 2021 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Background: Aging changes to the lower eyelids and midface include all but not only these changes: pseudoherniated orbital fat, tear trough deformity, lid laxity, and dermatochalasis. Surgical repair often aims at treating redundant skin or orbital fat malposition with a lower eyelid blepharoplasty. In manipulating the inferior orbital fat pads, a surgeon has many options including excision, repositioning, or augmentation with synthetic dermal filler, autologous fat grafts, or acellular dermal allografts [1]. The aim of this study is to find the best approach in preventing fat herniation recurrence in lower lid blepharoplasty. **Methods:** The patients in study were classified into three groups depending on the used surgical technique, to test the most effective technique associated with minimal rate of lower fat pad recurrence after surgery. Two of these techniques include a muscular flap suspension from the orbicularis oculae muscle. **Results:** The two surgical techniques that include orbicularis oculi muscle suspension are associated with no recurrence of lower herniated fat pads after blepharoplasty. **Conclusions:** The suspension of orbicularis oculi muscle has an important role in enhancing the lower orbital septum and prevents the recurrence of the lower herniated fat pads.

Keywords

Infraorbital Fat, Lower Lid Blepharoplasty, Lower Fat Pads, Orbicularis Oculi Muscle Suspension

1. Introduction

Lower lid bulge is known as a part of the aging process. Lower lid bulge can be produced by one of 2 major mechanisms or a combination of them: herniated

excessive intraorbital fat and/or weakening of supporting components of the lower eyelid, including skin, orbicularis oculi muscle, orbital septum, capsulopalpebral fascia, Lockwood ligament, and lateral canthus [2] [3] [4] [5]. Lee *et al.* [6] reported that total orbital fat (OF) volume and fat volume of anterior to the inferior orbital rim (IORF) increased significantly after 40 s in both male and female groups compared with that of the 20 s. The ratio of IORF to OF showed significant differences after 60 s compared with that of 20 s.

Therefore treating these anatomic changes and avoiding their recurrence is an important part of periorbital rejuvenation surgery.

Many techniques have been described to treat this fat compartment bulging, with different results and different recurrence average was reported in medical records.

We used 3 different techniques here concentrating on recurrences after fat pads removal.

2. Materials and Methods

110 patients are undergoing aesthetic upper and lower blepharoplasty in our Plastic and Reconstructive division in Almowasat Hospital in Damascus from 2018 to 2021.

46 patients who were well followed up were retrospectively reviewed and categorized into three groups according to the surgical techniques employed.

All patients have undergone upper and lower blepharoplasty surgery, without any other associated procedures like face lifting, brow lifting, midface lift, or fat injection in face.

All patients with previous periocular surgery were excluded from the study, also we did exclude patients with periocular diseases (such as blepharoptosis, dry eye syndrome, ...)

It happened to be that all patients were females in the study but that was no inclusion criteria.

2.1. Group 1 (15 Patients)

Upper and lower blepharoplasty with dissection of central and lateral part of lower eyelid orbicularis oculi muscle as flap (2 cm length, 0.5 cm width) from lower eyelid skin flap and suspension it on lateral orbital margin periosteum 2 mm above the level of the medial canthus via passing this muscle flap through a tunnel that was dissected beneath the skin flap lateral the lateral canthus and between the upper and lower blepharoplasty incisions (**Figure 1**).

This fixation of muscle flap was performed using 5/0 Nylon suture one mattress stitch (n = 15).

2.2. Group 2 (15 Patients)

Upper and lower blepharoplasty were done with lateral lower eyelid tarsal plate suspension on lateral orbital margin periosteum 2 mm above medial canthus

level without creating previous lateral tunnel (**Figure 2**).

This fixation of lateral lower eyelid tarsal plate was also performed with 5/0 Nylon suture one mattress stitch (n = 15).

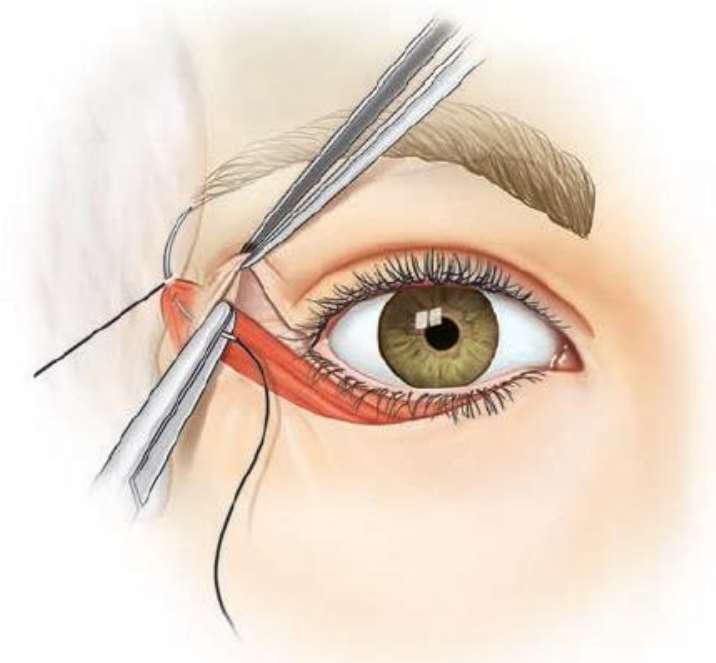


Figure 1. Group 1 orbicularis oculae flap suspension.

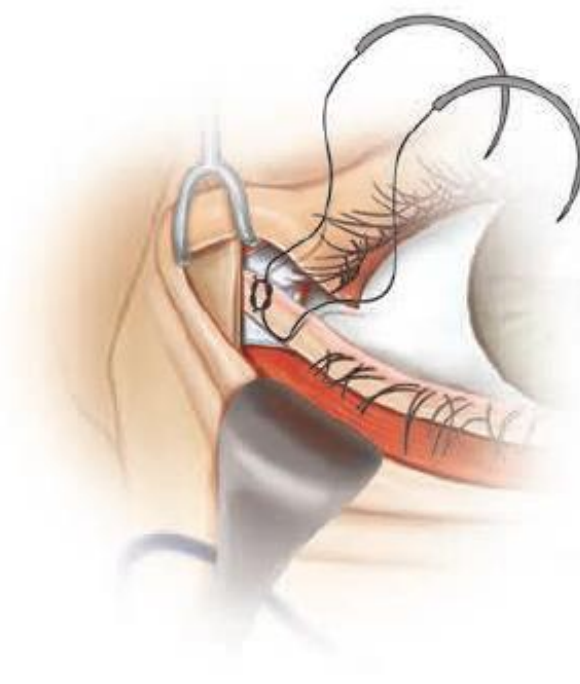


Figure 2. Group 2 tarsal plate suspension.

2.3. Group 3 (16 Patients)

Upper and lower blepharoplasty with suspension of both lower eyelid orbicularis oculi muscle dissected flap and lateral lower eyelid tarsal plate on the lateral orbital margin periosteum 2 mm above medial canthus level via passing these structures through the tunnel that was dissected beneath the skin flap lateral the lateral canthus and between the upper and lower blepharoplasty incisions.

This fixation of these two anatomic structures was performed with one Nylon Mattress stitch for each of them (n = 16).

The mean age was between 40 - 70 years at surgery; the mean follow-up period was 1 year.

Clinical examination and Photographs were used to follow-up the patients.

The herniated fat pads were treated in all patients with using partial surgical excision or bipolar cauterizing, without using the repositioning technique, and without resuturing of lower incised septum (**Table 1**).

3. Results

The recurrence of lower eyelid pads occur in 4 patients in group 2, 4/15 (26.66%) patients:

- 1 patient unilateral.
- 3 patients bilateral.

There is no recurrence in the whole patient groups 1 + 3.

The recurrent fat pads in two patients were big, apparent, and have the same size before surgery.

In the other two patients the recurrent fat pads were moderate in size and appearance (**Figure 3**, **Figure 4**).

After more than 1 year of follow up no patients in groups 1 or 3 have any complaints about fat pad bulging relapse.

And the recurrence was determined by both the patient and the surgeon and according to previous pictures of the patient.

Recurrence patients requested another operation for fat pads more than 1 year after the first operation.

Table 1. Patients groups characteristics, OO = orbicularis oculae.

Group number	1	2	3
Number of Patients	15	15	16
Mean age (year)	51	50.9	53
Female percentage (%)	100	100	100
Technique	OO flap	Tarsal suspension	Oo flap + tarsal suspension
Mean follow up (month)	19.5	18	20.5
Fat bad recurrence (%)	0	26.6	0



Figure 3. Patient before upper and lower blepharoplasty.



Figure 4. Patient after 1 year of upper and lower blepharoplasty with recurrent lower eyelid fat herniation.

4. Discussion

Different problems can be encountered when planning a lower blepharoplasty, such as festoons, prominent fat bags, and a conspicuous transition from eyelid to cheek. Frequently, they occur simultaneously. In such cases, a larger amount of skin excision is needed to achieve an adequate correction. This carries an increased risk of eyelid retraction when dealing with hypotonic eyelids. Orbicularis muscle suspension can provide vertical support to the eyelid and so achieve a safer, more effective correction.

Several techniques have been reported to obtain this effect. We have found a laterally based transposition orbicularis flap to be a safe and effective method to transmit a controlled amount of traction to the lower lid [7].

In our study we have found that suspension of the orbicularis oculi muscle has also an important role in supporting the lower orbital septum and prevent the recurrence of the lower herniated fat pads.

And our results are familiar to another international study which includes the following.

While the incision of the orbicularis oculi muscle with lateral suspension of this muscle has been used by many authors to improve the tension of the lower eyelid [8]-[15]. They considered that the suspension of the orbicularis oculi muscle on the lateral orbital margin (with or without a true lateral canthus suspension) not only suspend the lower eyelid, but also improve the contour of the lower eyelid by redraping the skin and muscle, and by strengthening the orbital septum and consequently enhancing posterior placement of the herniated fat [16] [17] [18].

5. Conclusions

Suspension of the orbicularis oculi muscle in patients group 1 + 3 has a significant role in preventing recurrence of the herniated fat pads after upper and lower blepharoplasty.

This study suggests that the anchorage of the orbicularis muscle flap to the upper lateral orbital rim prevents the recurrence of the lower fat pads after blepharoplasty, independent of lateral canthopexy or plasty.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Murri, A., Hamill, E.B., Hauck, M.J. and Marx, D.P. (2017) An Update on Lower Lid Blepharoplasty. *Seminars in Plastic Surgery*, **31**, 46-50.
<https://doi.org/10.1055/s-0037-1598632>
- [2] Castanares, S. (1946) Blepharoplasty for Herniated Intraorbital Fat: Anatomical Basis for a New Approach. *Plastic and Reconstructive Surgery*, **8**, 46-58.
<https://doi.org/10.1097/00006534-195107000-00003>
- [3] Camirand, A., Doucet, J. and Harris, J. (1997) Anatomy, Pathophysiology, and Prevention of Senile Enophthalmia and Associated Herniated Lower Eyelid Fat Pads. *Plastic and Reconstructive Surgery*, **100**, 1535-1546.
<https://doi.org/10.1097/00006534-199711000-00026>
- [4] De la Plaza, R. and Arroyo, J.M. (1988) A New Technique for the Treatment of Palpebral Bags. *Plastic and Reconstructive Surgery*, **81**, 677-687.
<https://doi.org/10.1097/00006534-198805000-00005>
- [5] Dacry, S.J., Miller, T.A., Goldberg, R.A., et al. (2008) Magnetic Resonance Imaging Characterization of Orbital Changes with Age and Associated Contributions to Lower Eyelid Prominence. *Plastic and Reconstructive Surgery*, **122**, 921-929.
<https://doi.org/10.1097/PRS.0b013e3181811ce8>
- [6] Lee, J.M., Lee, H., Park, M.S., et al. (2011) The Volumetric Change of Orbital Fat with Age in Asians. *Annals of Plastic Surgery*, **66**, 192-195.
<https://doi.org/10.1097/SAP.0b013e3181e6d052>
- [7] Innocenti, A., Mori, F., Melita, D., Dreassi, E. and Innocenti, M. (2017) Effects of Orbicularis Oculi Flap Anchorage to the Periosteum of the Upper Orbital Rim on the Lower Eyelid Position after Transcutaneous Blepharoplasty: Statistical Analysis of Clinical Outcomes. *Journal of Plastic, Reconstructive & Aesthetic Surgery*, **70**,

- 385-391. <https://doi.org/10.1016/j.bjps.2016.10.019>
- [8] Adamson, J.E., McCraw, J.B. and Carraway, J.H. (1979) Use of a Muscle Flap in Lower Blepharoplasty. *Plastic and Reconstructive Surgery*, **63**, 359-363. <https://doi.org/10.1097/00006534-197903000-00011>
 - [9] de Castro, C.C. (2004) A Critical Analysis of the Current Surgical Concepts for Lower Blepharoplasty. *Plastic and Reconstructive Surgery*, **114**, 785-793. <https://doi.org/10.1097/01.PRS.0000131238.55620.9F>
 - [10] Furnas, D.W. (1981) The Orbicularis Oculi Muscle: Management in Blepharoplasty. *Clinics in Plastic Surgery*, **8**, 687-715. [https://doi.org/10.1016/S0094-1298\(20\)30398-9](https://doi.org/10.1016/S0094-1298(20)30398-9)
 - [11] Hamra, S.T. (1996) The Role of Orbital Fat Preservation in Facial Aesthetic Surgery: A New Concept. *Clinics in Plastic Surgery*, **23**, 17-28. [https://doi.org/10.1016/S0094-1298\(20\)31138-X](https://doi.org/10.1016/S0094-1298(20)31138-X)
 - [12] Hamra, S.T. (1992) Repositioning the Orbicularis Oculi Muscle in the Composite Rhytidectomy. *Plastic and Reconstructive Surgery*, **90**, 14-20. <https://doi.org/10.1097/00006534-199207000-00002>
 - [13] Hinderer, U.T. (1975) Blepharocanthoplasty with Eyebrow Lift. *Plastic and Reconstructive Surgery*, **56**, 402-409. <https://doi.org/10.1097/00006534-197510000-00006>
 - [14] McCord, C.D., Codner, M.A. and Hester, T.R. (1998) Redraping the Inferior Orbicularis Arc. *Plastic and Reconstructive Surgery*, **102**, 2471-2479. <https://doi.org/10.1097/00006534-199812000-00034>
 - [15] Mladick, R.A. (1993) Updated Muscle Suspension and Lower Blepharoplasty. *Clinics in Plastic Surgery*, **20**, 311-315. [https://doi.org/10.1016/S0094-1298\(20\)31223-2](https://doi.org/10.1016/S0094-1298(20)31223-2)
 - [16] Furnas, D.W. (1978) Festoons of Orbicularis Muscle as a Cause of Baggy Eyelids. *Plastic and Reconstructive Surgery*, **61**, 540-546. <https://doi.org/10.1097/00006534-197804000-00007>
 - [17] Zoumalan, C.I., Lattman, J., Zoumalan, R.A., *et al.* (2010) Orbicularis Suspension Flap and Its Effect on Lower Eyelid Position: A Digital Image Analysis. *Archives of Facial Plastic Surgery*, **12**, 24-29. <https://doi.org/10.1001/archfaci.2009.105>
 - [18] Hester, T.R., Ashinoff, R.L. and McCord, C.D. (2006) Managing Postseptal Fat in Periorbital Rejuvenation: Anatomic Intraorbital Replacement Using Passive Septal Tightening. *Aesthetic Surgery Journal*, **26**, 717-724. <https://doi.org/10.1016/j.asj.2006.10.002>



Call for Papers

Modern Plastic Surgery

ISSN: 2164-5213 (Print) ISSN: 2164-5280 (Online)
<https://www.scirp.org/journal/mps>

Modern Plastic Surgery is an international journal dedicated to the latest advancement of plastic surgery. The goal of this journal is to provide a platform for researchers and academics all over the world to promote, share, and discuss various new issues and developments in plastic surgery related problems. All manuscripts must be prepared in English, and are subject to a rigorous and fair peer-review process. Accepted papers will immediately appear online followed by printed hard copy.

Editorial Board

Dr. Dror Aizenbud
Prof. Eckhard U. Alt
Prof. Bernardo Hontanilla Calatayud
Prof. Salvatore Carlucci
Dr. Nitin Chauhan
Prof. Abdou Mohammed Abd Allah Darwish
Dr. Christopher R. Davis
Dr. Alexander Dionysopoulos

Dr. Marek Dobke
Prof. Almodather Mohamed
Mohamed Mahmoud Elhadidy
Prof. Osama A. Farouk
Prof. James D. Frame
Dr. Medhat Emil Habib
Dr. Fernando A. Herrera
Dr. Ali Izadpanah

Prof. Jih-Yang Ko
Prof. David Daehwan Park
Prof. Alberto Rancati
Prof. Jose Humberto Cardoso Resende
Prof. David A. Sherris
Prof. Zekeriya Tosun
Prof. Pedro Vidal
Prof. Ronit Wollstein

Subject Coverage

The journal publishes original papers including but not limited to the following fields:

- Burn Surgery
- Cosmetic Surgery
- Craniofacial Surgery
- Hand Surgery
- Microsurgery
- Pediatric Plastic Surgery
- Reconstructive Surgery

We are also interested in: 1) Short Reports—2-5 page papers where an author can either present an idea with theoretical background but has not yet completed the research needed for a complete paper or preliminary data; 2) Book Reviews—Comments and critiques.

Notes for Intending Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are refereed through a peer review process. For more details about the submissions, please access the website.

Website and E-Mail

<https://www.scirp.org/journal/mps>

E-mail: mps@scirp.org

What is SCIRP?

Scientific Research Publishing (SCIRP) is one of the largest Open Access journal publishers. It is currently publishing more than 200 open access, online, peer-reviewed journals covering a wide range of academic disciplines. SCIRP serves the worldwide academic communities and contributes to the progress and application of science with its publication.

What is Open Access?

All original research papers published by SCIRP are made freely and permanently accessible online immediately upon publication. To be able to provide open access journals, SCIRP defrays operation costs from authors and subscription charges only for its printed version. Open access publishing allows an immediate, worldwide, barrier-free, open access to the full text of research papers, which is in the best interests of the scientific community.

- High visibility for maximum global exposure with open access publishing model
- Rigorous peer review of research papers
- Prompt faster publication with less cost
- Guaranteed targeted, multidisciplinary audience



**Scientific
Research
Publishing**

Website: <https://www.scirp.org>

Subscription: sub@scirp.org

Advertisement: service@scirp.org