

## DIFFERENT MELASMA TREATMENT METHODS AND THEIR BENEFITS: A LITERATURE REVIEW

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*Aline Arruda*

Universidade Professor Edson Antônio  
Velano – Unifenas

*Eliane Gaio Bittencourt*

Universidade Professor Edson Antônio  
Velano – Unifenas

*Maria Eduarda Alexandre Maimone*

Universidade Professor Edson Antônio  
Velano – Unifenas

*Bruno César Corrêa Salles*

Universidade Professor Edson Antônio  
Velano – Unifenas

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**Abstract:** In contemporary society, physical beauty has a strong meaning for people. A body outside the standards generates dissatisfaction and directly affects self-esteem. Melasma is a change in human skin pigmentation that affects men and especially women. There are treatments to control Melasma and recover the self-esteem of affected people. This research aims to carry out an integrative literature review to seek alternative therapies for the treatment and control of Melasma. An integrative literature review was carried out in the Google Scholar database covering the period from 2018 to 2022. After the selection process of the texts to compose the research, eight works were selected. It is concluded that the Melasma treatment methods available on the market have generated positive results for those seeking treatment. Both the application of different acids and treatment using techniques such as microneedling and nutricosmetics result in improvements in Melasma.

**Keywords:** Melasma, Melasma Treatment, Aesthetics, Melanocytes, Cutaneous Hyperpigmentation.

## INTRODUCTION

In modern society, personal visual presentation has become a factor of great relevance. Men and women seek a body that is physically and aesthetically close to perfection. Women are even more demanding than men in terms of aesthetics. A negative appearance can cause people to reduce their self-esteem, contributing to the emergence of psychological illnesses (GOES; PEREIRA, 2018).

Melasma is one of the main causes that lead people to seek dermatological treatments. Recent data point to 84% of searches in dermatological clinics for the treatment of Melasma (SBD, 2022). Women are the ones who suffer most from Melasma, the prevalence

in adult women is 15 to 35% (SANTOS et al, 2022). The occurrence of Melasma can affect any type of person, regardless of gender and ethnicity. However, between the ages of 30 and 55, the occurrence of Melasma increases, with females being the most affected (MAZON, 2017). When related to the phototype, the phototype classification III and IV of the Fitzpatrick Scale are the phototypes that most occur in Melasma (LIMA; MILHOMEM; BRANCO, 2022).

Melasma treatment is essential for people to recover their self-esteem and not compromise their overall quality of life. A growing alternative for combating Melasma is the search for treatments performed by Aesthetics professionals (SOUSA et al 2020).

Melasma treatment is based on hydroquinone, which can be used alone or in double or triple combinations. Double combinations can be made with retinoic or glycolic acids. Triple combinations, on the other hand, occur with retinoic acid and a topical corticosteroid, with the triple combination being more effective compared to the double combination (SOUSA et al, 2020).

Therefore, the search for treatments that can control Melasma becomes essential for an improvement in the patient's quality of life. This research aims to carry out an integrative literature review to seek alternative therapies for the treatment and control of Melasma.

## METHODOLOGY

This research is an integrative literature review. The integrative literature review addresses texts that are framed with the research theme, however, without the standardization of a systematic research. Because it is a research that has no direct relationship with human beings, it was not necessary to elaborate terms and submit them for authorization by the Research Ethics

Committee of `` Universidade Professor Edson Antonio Vellano``. To guide the research, a guiding question was elaborated: what are the Melasma treatment methods and their benefits? The research was carried out in the Google Scholar database, between May 2022 and September 2022. The period covered was from 2018 to 2022. The selection of studies that made up the present research took place in three stages, the first being the search in the Google Scholar database and reading the titles of the texts found. The second stage was a reading of the abstracts of the pre-selected articles. Finally, a full reading of those who were relevant to the theme was carried out. Studies that did not address the topic, were not found in full, were not freely available, belonged to a period outside the proposed period in this research were excluded.

## RESULTS AND DISCUSSION

Initially, 297 studies were identified on the Google Scholar platform when carrying out the search. By applying the period filter, it was reduced to 23 articles. After reading the abstracts, eight studies remained, which were selected for reading in full.

Table 1 below presents the study on Melasma for the year 2019.

The study by Nascimento et al (2019) addressed the etiology and treatment of Melasma during pregnancy. The objective of the research was to carry out a literature review on the causes and treatment of Melasma during pregnancy. A search was carried out in Medline, Lilacs and Scielo databases. In the end, the authors concluded that depigmenting agents can be used for a maximum of three months in quantities of 1% to 3%, sunscreens, however Melasma disappears completely within a year after childbirth.

Non-invasive treatments were the topic addressed by Sousa et al (2020). The objective of the research was to test the effectiveness of

non-invasive procedures in the treatment of Melasma. Fifteen articles from the following databases were analyzed: Google Scholar, Scielo, PubMed and Lilacs. Cabin protocols for crystal peeling, equipment for microcurrent, radiofrequency and Wood's lamp were applied. It is concluded that the Melasma treatment techniques provide a satisfactory result in a short period of time.

In his research, Bianco (2021) attempted to identify more recent studies with evidence for and against the use of tranexamic acid, and an assessment of efficacy, dose, and outcomes was performed. A literature review was carried out between the years 1981 to 2020, in the Scielo, PubMed, NCBI, Lilacs databases. The author concludes that the main treatment used, hydroquinone, is no longer accepted as ideal or safe. Tranexamic acid had positive preliminary results and few adverse effects.

The research carried out by Oliveira et al (2021) addressed topical treatments for Melasma. The objective of the study was to present a literature review on topical acids most indicated and used in treatments. The period addressed was from 2009 to 2020. The authors concluded that there are several options for topical treatments, with hydroquinone being the most used. As for efficacy, those that obtained the best results were azelaic acid, kojic acid, retinoids, topical steroids, glycolic acid, mequinol and arbutin.

The study topic addressed by Schuch and Rossetto (2021) was the microneedling technique combined with the use of tranexamic acid to treat Melasma. The objective was to review published data on the application of topical tranexamic acid and associated with intradermal administration techniques. A literature review was carried out in PubMed, Scielo, Caps, Google Scholar and Science Direct databases. It was concluded that tranexamic acid has safe and effective therapeutic potential both through topical

Authors and year	Type of treatment	Conclusion
Nascimento <i>et al</i> , 2019	Topical products applied to pregnant women	This study analyzed the few therapeutic resources for the treatment of Melasma, where it found that adequate treatments can be carried out with trained professionals during pregnancy and that prevention is essential.

Table 1 - Study on Melasma in 2019.

Source: Prepared by the authors.

Authors and year	Type of treatment	Conclusion
Sousa et al, 2020	Pre-established cabin protocols	It was concluded that the techniques used together provided a satisfactory result in a relatively short period of time.

Table 2 - Study on Melasma in the year 2020.

Source: Prepared by the authors.

Authors and year	Type of treatment	Conclusion
Bianco, 2021	Melasma treatment with tranexamic acid	Until then, hydroquinone was the most used treatment for Melasma, but it is no longer accepted as ideal or safe according to recent evidence, just as tranexamic acid emerges as a medication with positive preliminary results and few or no adverse effects, although it needs more clinical studies.
Oliveira <i>et al</i> , 2021	Treatments made with hydroquinone, plant actives	It is concluded that there are several options for topical treatments, with hydroquinone being the most used. Combination therapy is the best mode of treatment.
Schuch; Rossetto, 2021	Use of tranexamic acid in different routes of administration	Tranexamic acid has been presented as a potential therapeutic option, it is safe and effective in controlling Melasma, both through topical and intradermal application, requiring further studies for further clarification.

Table 3 - Studies on Melasma in the year 2021.

Source: Prepared by the authors.

Authors and year	Type of treatment	Conclusion
Borges; Brito; Silva, 2022	Use of kojic acid as a depigmenting cosmetic active	It points out the use of kojic acid with positive effects for the treatment of Melasma.
Lima; Milhomem; Branco, 2022	Use of tretinoin and preventive measures for the treatment of Melasma.	The article discusses evidence raised in the literature that seeks to find the effectiveness of tretinoin as a treatment for Melasma and has been shown to improve the signs of photoaging
Santos et al, 2022	Use of nutricosmetics in the treatment of Melasma	The results of this study showed a positive effect in the association between topical treatment and nutricosmetics in melasma, in which they are able to provide a guarantee regarding the photoprotective and antioxidant action

Table 4 - Studies on Melasma in the year 2022.

Source: Elaborated by the author

and intradermal application.

The study by Borges, Brito, Silva (2022) addressed the use of kojic acid as a depigmenting agent. The objective of the research was to describe, through literature, the effects of kojic acid in the treatment of Melasma. The databases used were: Bireme and Google Scholar. The authors concluded that the use of kojic acid has positive effects for the treatment of Melasma.

The research carried out by Lima, Milhomem, Branco (2022), investigated the theme: treatment with tretinoin and measures to prevent Melasma. The objective of the study was to understand the aesthetic benefits of tretinoin, the active substance of retinoic acid, for the treatment of Melasma. The Scielo and Google Scholar databases were used. In the end, the authors concluded that retinoic acid presented satisfactory results in different concentrations. The positive peeling and in shorter period of time compared to topical creams.

In their study, Santos et al (2022) addressed nutricosmetics in the treatment of Melasma. The objective of the research was to analyze the effects of nutricosmetics in the treatment of Melasma. The research was carried out in the Lilacs, Dialnet, Medline and Scielo databases. The results of the study showed a positive effect in the association between topical treatment and nutricosmetics in melasma, in which they are able to provide a guarantee regarding the photoprotective and antioxidant action.

## CONCLUSION

It is concluded that the Melasma treatment methods available on the market have generated positive results for those seeking treatment. Both the application of different acids and the treatment using techniques such as microneedling and nutricosmetics, resulting in an improvement in Melasma. Hydroquinone has been the most used therapeutic option in the last 50 years in the treatment of melasma. It has the ability to inhibit tyrosinase, reducing the conversion of Dopa to Melanin. Because hydroquinone is a highly toxic phenolic compound with high skin penetration, prolonged use and in high doses can cause confetti hypochromia, which is the death of the melanocyte, or exogenous ochronosis, which is characterized by sooty blue-black hyperpigmentation, and the two possible side effects cannot be treated.

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