


# Pregnancy Mask: Melasma

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Melasma is a skin disease that is clinically characterized by the development of gray-brown macules. It is derived from the Greek word "melas", and the word meaning is black. It is also called "chloasma gravidarum", that is, the pregnancy mask.<sup>[1]</sup> Chloasma is derived from the word chloazein from Greek and means green.<sup>[2]</sup> Melasma and chloasma are used synonymously in the literature. However, since the resulting pigmentation is gray-brown, the term melasma is more preferred.<sup>[3]</sup>

## Epidemiology-Etiology

Melasma occurs in all races and ethnicities, but it has been demonstrated that it is more common in individuals and women with Fitzpatrick IV-VI skin types, including those living in intensive ultraviolet irradiated areas including individuals of Hispanic, Asian, and African descent.<sup>[4-8]</sup> Fitzpatrick skin classification is based on a person's response to sun exposure. I-III types are known as light skin, while IV-VI types are accepted as dark skin.<sup>[9,10]</sup>

Skin diseases are observed equally frequently in women who are pregnant and not pregnant. While 90% of chloasma cases are women, pregnant women constitute 50% -70% of this rate.<sup>[11,12]</sup> For this reason, it is the most common cosmetic problem related to pregnancy. Male patients constitute <20% of cases of melasma.<sup>[13,14]</sup>

## ABSTRACT

Melasma is the gray-brown hyperpigmentation of the skin. It is also known as the pregnancy mask. Skin diseases are observed equally frequently in women who are pregnant and not pregnant. While 90% of melasma cases are women, 50% to 70% of this rate is pregnant women. For this reason, it is the most common cosmetic problem related to pregnancy. Its etiology is still unknown. There are studies that include the main factors causing its occurrence; exposure to UV radiation, pregnancy, genetic factors, hormonal therapies and cosmetic product use. The most effective way to be protected from melasma is to avoid excessive exposure to the sun in order to prevent its formation during pregnancy.

**Keywords:** Hormone, melasma, pregnant, sun.

Melasma etiology is still unknown. However, many factors are involved in the development of the disease, etiologically and pathologically. Etiological factors involved in the pathogenesis of melasma include exposure to UV radiation, pregnancy, genetic factors, hormonal treatments and cosmetic products.<sup>[15]</sup> In a prospective study of 197 patients in Tunisia in 2010, aggravating factors of melasma were evaluated and sun exposure was accepted as the main aggravating factor.<sup>[16]</sup> UV-A and UV-B are the main radiation sources causing melanogenesis. The role of infrared radiation and visible light, which has a significantly low melanogenic potential, in the development and maintenance of melasma, is still uncertain.<sup>[17,18]</sup> The use of cosmetics and the use of certain medications, such as anticonvulsants and other photosensitizers, have also been shown as risk factors for melasma.<sup>[19,20]</sup> Similarly, a wide variety of chemicals such as arsenic, iron, copper, bismuth, silver, gold, and drugs such as antimalarials, tetracyclines, anticonvulsants, amiodarone, sulfonyleureas can induce hyperpigmentation of the skin and stimulate melanogenesis by accumulation in the surface layers.<sup>[21,22]</sup>

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## CAUSATION FACTORS OF MELASMA IN PREGNANCY

Immunological, metabolic, endocrine and vascular changes that occur during pregnancy initiate a number of physiological and pathological processes in the skin and its associated regions. Physiological skin changes during pregnancy are most likely due to hormonal changes associated with pregnancy. Serious physiological skin changes can sometimes be pathologically acceptable. The cause of melasma is the change in pigments during pregnancy.<sup>[23,24]</sup>

It is believed that one of the main reasons why melasma is seen more intensely during pregnancy is due to hormonal changes. Melasma is observed in the form of gray-brown spots on the face during the second trimester of pregnancy. Melasma with regular hyperpigmentation is clinically divided into three types: centrofacial (63%), malar (21%) and mandibular (16%).<sup>[3]</sup>

It was found that increased melasma during pregnancy also had a positive relationship with oral contraceptives. It has been demonstrated that 10-20% of women using oral contraceptives for 1-3 years may develop melasma.<sup>[7,25]</sup> While the role of progesterone as a triggering or protective factor is still uncertain, it has been found that estrogen may play a role in the pathogenesis of melasma in the results of various in vitro studies.<sup>[26]</sup> In another study conducted in 2007, increased vascularity and epidermal vascular endothelial growth factor were found to be one of the most important findings in melasma and showed that the number of dermal vessels correlated positively with pigmentation on the skin affected by melasma.<sup>[27]</sup> After birth, melasma regresses, but never disappears, and recurrence and exacerbation of melasma is common in subsequent pregnancies.<sup>[7]</sup>

## PROTECTION AND TREATMENT

Melasma pigmentation generally improves in winter and worsens in summer.<sup>[28]</sup> The most effective way to prevent melasma formation is to avoid sun exposure during pregnancy.<sup>[29]</sup> The use of sunscreen with a high protection value reduces the severity of the disease by 50% and reduces its incidence during pregnancy by more than 90%.<sup>[30,31]</sup> During a 12-month clinical trial, the role of broad-spectrum sun protection in the prevention and treatment of chloasma in pregnant women was evaluated. The results indicated that only five new cases of melasma, a 2.7% incidence and lower than 53% previously observed during pregnancy was recorded.<sup>[30]</sup>

In order to reach the correct diagnosis, a detailed medical history, detailed clinical examination of the skin, dermoscopy and histopathology must be taken and recorded.<sup>[13]</sup> Commonly used agents for treating melasma include hydroquinone, azelaic acid, kojic acid, glycolic acid, salicylic acid and tretinoin. Of these processes, hydroquinone is the gold standard.<sup>[4,7,27]</sup> The pregnancy category of drugs frequently applied for hyperpigmentation treatment such as hydroquinone and retinoic acid is C.<sup>[32]</sup> Multiple studies show that combination formulations offer the best results. These triple combination formulas usually contain different concentrations of hydroquinone, a retinoid, and a corticosteroid. The commonly used treatments mentioned above are often associated with universal recurrences. Second-line treatments, such as chemical peel and lasers, are effective in some patients, but these approaches can be associated with acute or long-term complications, especially in people with dark skin types. The search for effective treatments for melasma is still ongoing.<sup>[33]</sup>

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