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Herbal Cream: Removal of Stretch Marks After Pregnancy

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Abstract: *This review focuses on the prevalence and impact of stretch marks, scientifically known as striae gravidarum, on women during and after pregnancy. It notes that herbal creams have gained popularity as a non-invasive treatment for managing stretch marks and aims to evaluate their efficacy. Various herbal ingredients such as olive oil, aloe vera, and turmeric are believed to possess skin health benefits. Studies suggest promising results in reducing the appearance of stretch marks through moisturization, improved skin elasticity, collagen synthesis promotion, and antioxidant activity. Additionally, concerns about the toxicity of synthetic chemicals in cosmetics and their potential chronic side effects are highlight.*

Keywords: Herbal cream, striae gravidarum, pregnancy, stratiae distensae (SD)

I. INTRODUCTION

Throughout history, plants have been utilized for their healing properties, with records dating back at least 5,000 years to the Sumerians. The use of medicinal plants has been prevalent across various cultures, showcasing the deep-rooted connection between plants and human health. However, the emergence of synthetic drugs, exemplified by Friedrich Bayer and Co.'s introduction of aspirin in 1897, began to overshadow traditional herbal remedies. Aspirin, derived from willow bark, marked a shift towards synthetic alternatives despite its natural origins.

Herbal medicine encompasses a wide range of plant-derived products, including extracts, essential oils, and resins, utilized for therapeutic purposes. Around 70–80% of the global population, particularly in developing countries, relies on non-conventional medicine for primary healthcare, as reported by the World Health Organization. India, renowned for its rich cultural heritage, stands out as a significant producer of medicinal herbs, earning the moniker "botanical garden of the world." Ayurveda, a traditional medical practice in India, underscores the country's diverse healing traditions.

The term "cosmetic" originates from the Greek word "kosmtikos," signifying authority and skill in arranging. Herbal cosmetics, often termed "natural cosmetics," are gaining popularity due to their perceived lack of negative side effects. These products, comprising approved cosmetic ingredients supplemented with herbal components, aim to provide specific cosmetic benefits. Cosmetics, integral to daily routines, serve diverse purposes, including improving appearance, reducing wrinkles, combating acne, preventing stretch marks, and regulating oil production.

In summary, the historical use of plants for medicinal purposes has been overshadowed by the emergence of synthetic drugs. Nonetheless, herbal medicine continues to play a significant role, particularly in regions where traditional practices are deeply ingrained. India, with its vibrant cultural heritage, stands out as a major producer of medicinal herbs. The rise of herbal cosmetics reflects a growing preference for natural alternatives, driven by concerns about the side effects of synthetic products. Cosmetics, integral to daily self-care rituals, serve multifaceted purposes, from enhancing appearance to addressing specific skin concerns.

Definition of Cosmetics

The Drugs and Cosmetics Act defines cosmetics as articles that are meant to be rubbed, poured, sprinkled, sprayed, introduced into, or applied in any other way to the human body or any partof it in order to cleanse, beautify, enhance attractiveness, or change appearance. The cosmeticis exempt from the drug license preview.

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Overview of herbal creams and marketed study

Herbal creams have gained popularity for their natural ingredients, derived from herbal plants, which offer nutritional and health benefits without harmful or toxic effects. These ingredients are also used as bases in cream formulations. However, comprehensive reviews on herbal creams are lacking, with existing literature primarily focusing on formulation aspects rather than their overall efficacy. Herbal creams are categorized into medicated and non-medicated types based on their localized application to the skin. Medicated creams are intended for specific skin conditions, enhancing medication delivery to targeted sites.

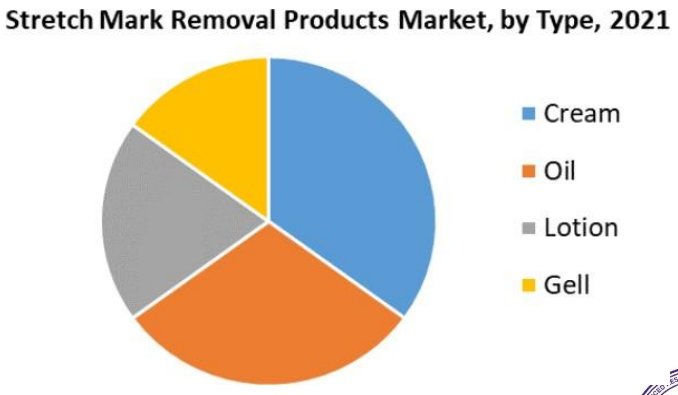
Stretch marks, characterized by fibrotic skin, are a common concern and drive the sales of lotions and creams designed for their removal. Consumer preference for at-home topical treatments fuels the demand for inexpensive stretch mark removal products like oils and serums, especially due to the high costs associated with procedures like lasers and microdermabrasion. Businesses capitalize on this demand by investing in e-commerce platforms to promote their product lines, offering sales and discounts to attract consumers.

As stretch marks are also a common sign of aging, there is a growing market for high-end, multipurpose skincare products catering to self-care trends. Sun protection, aging, and skin rejuvenation products, including wrinkle creams, lotions, and serums, are in high demand. Producers respond by launching multipurpose serums and creams to meet consumer needs. Stretch mark removal products, previously limited to creams, now include body butter, lotions, spray-on oils, and massage oils, expanding the market. This diversification is expected to drive market growth further.

Stretch mark removal products are available in various forms such as creams, oils, lotions, and gels, with creams being among the most popular due to frequent new product launches. Functional ingredients in these creams include retinol for plumping lines and strengthening skin, hyaluronic acid for plumping lines, Centella Asiatica for promoting cell formation, and silicone. Additionally, anti-stretch mark serums have gained popularity over time, featuring naturally occurring ingredients like plant extracts, jojoba oil, and avocado oil, aligning with the growing trend of natural skincare products.

In summary, herbal creams offer natural ingredients derived from herbal plants, providing nutritional and health benefits without harmful effects. They are categorized into medicated and non-medicated types, catering to various skincare needs. Stretch mark removal products are in high demand, with consumers seeking affordable at-home solutions, driving market growth. Producers respond by diversifying product offerings, including multipurpose serums and creams, to meet consumer preferences for high-end skincare products. This market trend is expected to continue, fueled by the growing focus on self-care and natural skincare solutions.

Previous studies have highlighted the significant drawbacks of using synthetic chemicals in cosmetics and beauty products, particularly creams. Prolonged use of these synthetic chemical-based creams can lead to major chronic toxic side effects, including skin sensitivity, allergies, and potentially fatal skin cancers. Some synthetic chemicals, such as paraben derivatives used as preservatives, even at very low concentrations, have been linked to serious skin diseases like skin cancer and allergies, especially in children. Additionally, synthetic chemicals may be classified as carcinogens, neurotoxins, or reproductive toxins, and can cause undesirable side effects such as permanent skin discoloration, damage to the nose and nasal passages, and hair allergies.



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Comparative studies between synthetic and herbal-based cosmetic formulations have been conducted, with recent research emphasizing the utility of biocosmetics, including herbal ingredients, as natural, safe, and effective alternatives to synthetic ingredients. There is a growing demand for herb-based cosmetics due to their negligible toxicity and side effects, as well as their reported nutritional benefits for the skin. Herbal creams are valued for their ability to shield the skin from various obstacles, provide a calming effect, and promote a healthy glow. Overall, herbal cosmetics are gaining popularity as consumers increasingly prioritize natural and safe skincare options.

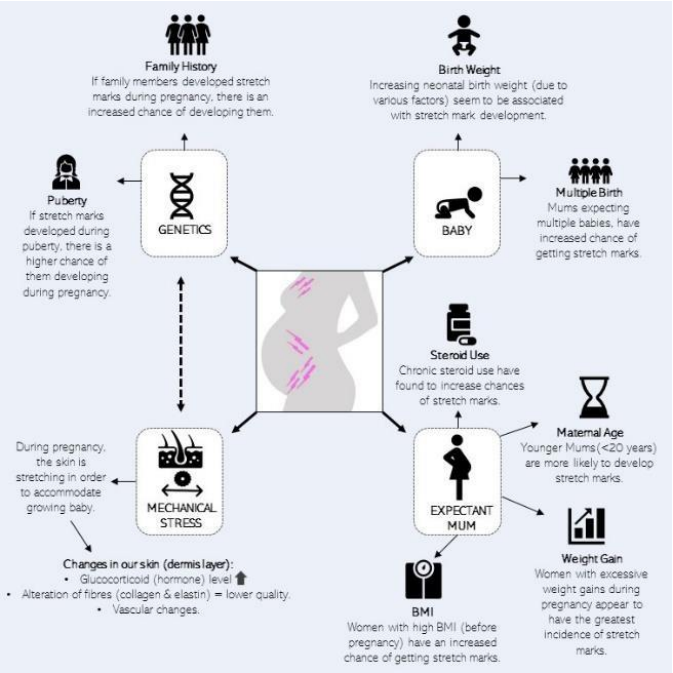
Overview of stretch marks

Pregnancy-related stretch marks, known as striae gravidarum, occur due to rapid weight gain and skin stretching between the dermis and epidermis layers. This stretching causes collagen fibers to break, leading to the formation of depressed bands on the skin, ranging in width from 1 to 10 mm and varying in length. These striae are primarily linked to epidermal atrophy and appear colorless, though they may fade over time without completely disappearing. Typically developing during the last trimester of pregnancy, striae gravidarum commonly appear on the breasts, thighs, hips, lumbar back, and buttocks.

These stretch marks often result in itching, which can be bothersome for pregnant women. Itching is usually the initial indication of striae gravidarum, primarily occurring on the abdomen's skin surface. The itching is attributed to the skin's loss of moisture during pregnancy, leading to dryness and susceptibility to irritation. Continuous scratching may exacerbate the condition, causing blisters or sores.

Overall, pregnancy-related stretch marks are a common occurrence, particularly among pregnant women, and can cause discomfort due to itching and skin dryness. These marks typically appear in areas where skin stretching is most pronounced and may persist even after pregnancy, though they may fade with time.

Stretch marks, or stratiae distensae (SD), are common skin lesions resulting from dermal stretching. There are two types: striae rubrae and striae albae. Striae rubrae are initially erythematous, red, slightly raised lesions oriented perpendicular to skin tension, often symptomatic, and represent the acute stage. In contrast, striae albae are the chronic stage, characterized by diminished lesions that appear atrophic, wrinkled, and hypopigmented.



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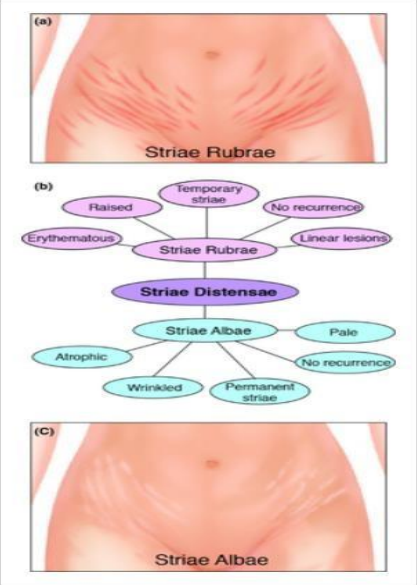

Figure shows:
Comparisons between striae albae and striae rubrae. (a) An illustration of striae rubrae on the abdomen. (b) A diagram to demonstrate the difference in characteristics between striae rubraeand striae albae. Striae rubrae are considered as an early form of SD, which are erythematous,red and sometimes slightly raised linear lesions. They do not recur and are classified as temporary striae. Striae albae are atrophic, wrinkled and pale. They also do not recur but are permanent striae. (c) An illustration of striae albae on the abdomen.

Prevalence of stretch marks

Striae distensae (SD), commonly known as stretch marks, are cutaneous lesions characterized by the atrophy and flattening of the epidermis. Initially appearing as pink to violaceous streaks, they later mature into white, crinkly marks. Predominantly affecting women, stretch marks are particularly prevalent during pregnancy, with up to 90% of pregnant women experiencing them. The prevalence of SD in the general population varies widely, ranging from 11% to 88%. Additionally, around 90% of women exhibit either stretch marks or hyperpigmentation, highlighting the commonality of these skin abnormalities. Studies suggest that stretch marks affect a significant proportion of adolescents, with prevalence estimates ranging from 6% to 86%.

Obesity is also associated with an increased risk of stretch marks, with 43% of obese individuals reporting their presence. Research published in the British Journal of Dermatology indicates that between 50% and 90% of pregnant women will develop stretch marks. While stretch marks are commonly observed around the abdomen during pregnancy, their occurrence in other areas, such as the hips, varies among individuals. Factors influencing the development of stretch marks during pregnancy include race, family history, and the presence of pre-existing stretch marks on the breast or thighs. However, pre-pregnancy body mass index (BMI) and BMI changes during pregnancy do not appear to be significant predictors.

The timing of stretch mark onset during pregnancy is also noteworthy, with 90% of affected women experiencing them in the first trimester, and the average gestational age at onset being approximately 24.6 weeks. Age, BMI, and baby weight centile have been identified as key factors associated with the development of stretch marks during pregnancy. Younger women tend to exhibit a higher prevalence of stretch marks, potentially due to dietary factors linked to socioeconomic status.

Several studies have highlighted the strong familial predisposition to stretch marks, with individuals with a family history being more likely to experience moderate-to-severe forms. However, other factors such as skin type,

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socioeconomic status, smoking, use of skin creams, fetal gender, and gestational age at delivery do not consistently correlate with the presence or severity of stretch marks.

In summary, stretch marks are a common dermatological concern, particularly among pregnant women and adolescents, as well as individuals with obesity. Their development is influenced by various factors including genetics, race, age, and BMI. While stretch marks are often associated with pregnancy, they can also occur due to rapid weight gain or growth during adolescence. Understanding the factors contributing to the development of stretch marks is essential for effective prevention and management strategies.

The surge in popularity of herbal cosmetics stems from the increasing consumer preference for natural products over synthetic ones in the fashion and beauty industry. These herbal cosmetics offer several benefits, making them a preferable option for many individuals seeking personal care products to enhance their appearance while prioritizing health and safety.

First and foremost, herbal cosmetics are composed of natural ingredients derived from various plant parts and extracts, excluding harmful synthetic chemicals. This reliance on plant-based components ensures that these products are free from potentially hazardous substances, promoting skin health and radiance. Consumers are increasingly seeking products with traceable and natural ingredients, emphasizing the properties of botanicals to address concerns about synthetic chemicals and mineral oils commonly found in conventional cosmetics.

Safety is another critical advantage of herbal cosmetics. Dermatologists have confirmed that these products are hypoallergenic and safe for use on all skin types. Unlike synthetic cosmetics, which may contain synthetic antioxidants like BHA and BHT known to cause skin allergies and categorized as potential human carcinogens, herbal cosmetics utilize natural antioxidants such as vitamin C, minimizing the risk of adverse reactions and long-term health implications.

Furthermore, herbal cosmetics are suitable for all skin types, including sensitive and oily skin. Unlike synthetic cosmetics that may contain coal tar, a known human carcinogen commonly used in cosmetics, herbal cosmetics offer safer alternatives derived from herbs, ensuring compatibility with various skin tones and conditions without risking skin irritation or exacerbation of existing skin issues.

The diversity of options available in herbal cosmetics caters to the preferences and needs of all makeup enthusiasts. From foundation to lipstick and mascara, there is a wide range of naturally formulated products to choose from, offering both local and internationally renowned options. Additionally, herbal cosmetics are budget-friendly, often priced lower than synthetic counterparts, making them accessible to a broader consumer base.

Notably, herbal cosmetics are not tested on animals, reflecting a commitment to ethical and cruelty-free practices. Unlike synthetic cosmetics that may undergo animal testing to ensure safety and efficacy, herbal cosmetics are developed and tested in labs using the latest technology, without involving animals. This aligns with growing consumer awareness and concern about animal welfare issues in the beauty industry.

In conclusion, herbal cosmetics offer a multitude of benefits, including natural ingredients, safety, suitability for all skin types, diverse options, affordability, and ethical practices. These factors contribute to their increasing popularity among consumers seeking effective and sustainable alternatives to synthetic cosmetics. As the demand for natural and environmentally friendly products continues to rise, herbal cosmetics are poised to play a significant role in shaping the future of the fashion and beauty industry.

Herbal ingredients used in removal of stretch marks

Olive oil

Olive oil's health benefits have been linked to maintaining beauty. Olive oil is derived from olive trees that thrive in the Mediterranean region, which receives plenty of sunlight. Along with the culinary and health industries, the beauty industry also knows a lot about olive oil. This is because olive oil has a high nutritional content. Olive oil is another effective treatment for pregnancy-related discomfort, particularly for itching in the abdominal region where striae gravidarum is beginning to appear.

This is because olive oil has a high vitamin E content that helps moisturize skin that has started to develop striae gravidarum. Itching is a very uncomfortable and upsetting skin sensation that makes you want to scratch it. Pregnant women typically have more sensitive skin than non- pregnant women, according to Dr. Tjut Nurul Alam Jacoeb Sp. KK

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(K). Over time, striae are caused by the skin stretching. As a result of the skin losing moisture and the dermis layer, this eventually results in itching.

One of the greatest substitutes for treating striae gravidarum during pregnancy is olive oil, which is applied to the affected area and massaged in. This will facilitate better blood flow to the skin. It takes an hour for the skin to absorb vitamins at their best. It is performed at least twice a day, preferably after taking a bath, when the skin is damp.

Centella asiatica

Gotu kola oil, derived from the leaves of the Centella asiatica Linn plant, stands out as a significant herbal medicine for treating stretch marks. Its effectiveness is attributed to triterpenoids, specifically asiaticosides, which stimulate collagen synthesis and skin cell regeneration. The extraction process involves harvesting the leaves by hand during the plant's growing season, followed by natural drying and storage in Madagascar. The first extraction yields Centella soft extract, which is then concentrated and refined to obtain the asiaticoside fraction. Further processing involves obtaining madecassic and asiatic acid fractions from discarded solutions through concentration, pH adjustment, and purification. These fractions are then combined to achieve the desired composition, typically consisting of madecassic acid (10–14%), asiatic acid (6–9%), and asiaticoside (10–16%).

The primary bioactive components of Centella asiatica, including madecassoside, madecassic acid, and asiaticoside, contribute to its therapeutic properties. These compounds, with a trisaccharide moiety attached to the aglycone asiatic acid, play a pivotal role in promoting skin health and repair. Centella asiatica's role in skin remodeling makes it a valuable natural ally in addressing stretch marks.

With its fixed composition and proven efficacy, Centella asiatica offers a reliable solution for managing stretch marks. Its ability to stimulate collagen production and skin regeneration underscores its value in skincare formulations. Incorporating Centella asiatica into skincare routines can aid in minimizing the appearance of stretch marks and promoting overall skin health, offering a natural and effective approach to addressing this common cosmetic concern.

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Aloe vera

During pregnancy, the body undergoes significant changes, including hormonal fluctuations and rapid skin stretching, leading to the formation of stretch marks known as striae gravidarum. While not posing health risks, these marks can cause distress and impact self-esteem, prompting individuals to seek practical solutions. Aloe vera emerges as a promising treatment due to its potential effectiveness in managing stretch marks.

Aloe vera, a succulent plant with a long history in traditional medicine, is renowned for its therapeutic properties, particularly in enhancing skin health. Its gel contains bioactive compounds like polysaccharides, glycoproteins, vitamins, minerals, enzymes, and phenolic compounds, offering numerous therapeutic benefits such as moisturizing, wound healing, antioxidant, and anti-inflammatory effects.

Moisturizing plays a crucial role in preventing stretch marks by enhancing skin elasticity and resilience during pregnancy. Aloe vera's humectant properties draw moisture into the skin and form a protective barrier against dehydration. Its polysaccharide content further boosts skin hydration and suppleness by aiding water retention.

Furthermore, stretch marks result from an inflammatory response, which aloe vera combats effectively with its potent anti-inflammatory qualities. Inflammation is a key factor in striae gravidarum's pathophysiology, contributing to skin damage and impaired healing. Aloe vera soothes irritated skin and promotes natural healing by reducing inflammation.

Additionally, aloe vera exhibits antioxidant activity due to its high concentrations of vitamins C and E, along with other organic compounds. Antioxidants neutralize free radicals, unstable molecules that cause oxidative stress and cellular damage. By scavenging free radicals, aloe vera shields skin cells from oxidative damage, facilitating skin cell regeneration and minimizing stretch marks.

Clinical studies, like the one conducted by Tabatabaei-Malazy et al. in 2019, support aloe vera's efficacy in treating stretch marks. Their randomized controlled trial demonstrated significant improvement in stretch mark appearance among participants using topical aloe vera gel compared to the control group. However, limitations such as small-scale studies and lack of long-term follow-up highlight the need for further research to establish optimal dosage, formulation, and application techniques for aloe vera in managing stretch marks.

Despite these limitations, aloe vera holds promise as a natural remedy for striae gravidarum, supported by both clinical evidence and traditional use. Continued research efforts will help elucidate its full therapeutic potential and ensure its safe and effective utilization in addressing stretch marks during pregnancy.

Croton lechleri (Dragon's blood) presents antioxidant, anti-inflammatory and healing properties due mainly to the principal constituents of the resin: proanthocyanidins; taspin, an alkaloid; catechin; epigallocatechin; and epicatechin. Regarding the healing process, previous studies have showed that C. lechleri extract stimulates the proliferation and migration of fibroblasts and also the production of collagen and the epithelial regeneration. There are numerous studies concerning the multitude of medicinal properties of C. lechleri extract, such as wound healing, cicatrizing, antibacterial, antiviral, anti-inflammatory and antioxidant activity.

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Rubia cardifolia (manjistha)

Manjistha, also known as Rubia cordifolia Linn., is regarded as Kushtanuta and Raktashodaka.[59] They are regarded as Varnakrit, the perennial climber that stimulates skin healing through localized action on the skin.[60] Additionally, it has demonstrated antimicrobial, anti-inflammatory, and antioxidant properties as well as wound healing activity.[61] Because Manjistha (Rubia cordifolia Linn.) contains Tikta, Kashaya, and Madhura Rasa, it relieves burning sensations. Kashaya Rasa performs the Varnakrit action, while Tikta Rasa and UshnaVeerya perform the Kandughna action.[62] The current study has been conducted under the external application of Manjistha in the form of Ghrita over the internal usage of Kwatha as mentioned in authentic text, taking into accountthe risk factors in pregnancy.[63] Since there isn't a similar external application on the market, Ghrita[64] is used in this study in place of Lepa.

Curcuma domestica (turmeric)

It is claimed that curcumin exhibits multicellular activity because it inhibits 97.3% of cellular lipid peroxidation activity, which can counteract and lower the risk of various diseases, including antiproliferation and antioxidant activity. In models of both acute and chronic inflammation, curcumin compounds were found to be effective in the study. Asian herbal medicine has long made extensive use of the tropical spice plant known as turmeric (Curcuma Domestica). Curcumin and desmethoxycumin are two of the therapeutic compounds found in turmeric, according to

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Wikipedia. The plant turmeric is used to treat a wide range of illnesses because of its high vitamin C content. Turmeric also has antiseptic properties that help brightenskin tone, reduce itching, and prevent wound inflammation.

HERBAL CREAM PRODUCTS AVAILABLE IN THE MARKET

Name of the product	Ingredients	Applications or uses
Kapiva's Ghee kumkumadi cream	Karanjaka, Kumkumadi,Ghee	Experience visibly toned and smooth skin Reduces and prevents stretch marks Ayurvedic principles of skin healing
Pokonut's natural stretch marks toner	Mulethi, Hyaluronic acid, Almond oil, Coconut oil, Carica papaya, Shea butter	Smoothens and evens skin tone Boost skins elasticity and firmness
Nut habit's pure moringa coconut cream	Moringa,Sesame, Coconut and almond oil, Mulethi, Giloy	Stimulates and strengthens dermis Maintains cellular texture Boosts collagen production
Prakrta vit. E belly butter cream	Raw cocoa butter, Raw shea butter, Virgin coconut oil, Cold pressedhempseed oil, Raw mango seedbutter	Naturally boosts collagen production inskin Prevents and lightens stretch marks Soothe stretched itchy skin
The moms co natural stretch marks body butter	Cocoa butter, Rosehip oil, Organic shea butter, Seabuck thorn oil	Heals dry and itchy skin Reduces inflammation and deeply moisturises Repairs skin damages and improves skin elasticity Supports collagen formation
Vigini's natural actives erase stretch marks and scars removal cream	Tea leaves, Shea butter, Almond oil, Avocado oil	Increases elasticity Reduces redness and itching Increases production of new cells Encourages collagen production
Sirona's stretch marks body butter	Vitamin A, Avocado oil, Cocoa and shea butter, Coconut oil	Softens skin Locks in moisture Soothes itchiness Reduces stretch marks

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EcoBerry's belly butter cream	Shea butter, Coconut oil, Vitamin A, E	Forms protective barrier over the skin Reduces wrinkles Nourishes with vitamins and antioxidants Soothes rashes
Mylo care's stretch marks cream	Saffron, Coconut oil, Kokum, Shea butter	Prevents and fades stretch marks Relieves itchy skin Reduces dark spots and wrinkles
GynoCup's stretch marks removal cream	Cetearyl olivate, Jojoba oil, Chamomile hydrosol, Aloe vera	Reduces stretch marks and scars Nourishes skin Soothes itchiness

III. CONCLUSION

Stretch marks are a common issue for pregnant women and can impact their body image. Herbal creams are becoming popular for treating these marks because they're seen as safe and effective. Ingredients like olive oil, aloe vera, and vitamin E in these creams can help moisturize the skin, make it more elastic, and even out its tone. Meanwhile, regular creams with synthetic chemicals might not be as safe. Long-term use could lead to skin problems like allergies or even skin cancer. So, herbal creams seem like a good choice for dealing with stretch marks after pregnancy. But more research is needed to be sure they work well and are completely safe. It's also important for women to remember that there are other ways to take care of their skin after having a baby, like staying hydrated and eating healthy.

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