

12-Week Clinical Evaluation of Menopausal Skin Function Using Protective and Reparative Skin Care

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How to cite this paper: Hampton, T., Aganahi, A., Tanaka, Y. and Parker, R. (2025) 12-Week Clinical Evaluation of Menopausal Skin Function Using Protective and Reparative Skin Care. *Journal of Cosmetics, Dermatological Sciences and Applications*, 15, 120-138.

<https://doi.org/10.4236/jcda.2025.153008>

Received: August 20, 2025

Accepted: September 16, 2025

Published: September 19, 2025

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Abstract

Background: The skin is hormonally responsive, and declining estrogen levels during menopause are linked to measurable structural and functional changes. Estrogen, along with progesterone and androgens, affects receptors involved in collagen synthesis, antioxidant activity, immune response, and barrier integrity. Estrogen deficiency disrupts these pathways, reducing skin resilience, hydration, and immune defence, contributing to visible ageing. **Purpose:** To investigate the clinical effectiveness, safety and tolerability of a tailored topical skincare regimen to support skin resilience, function, and radiance throughout the menopause transition, in order to manage skin changes associated with hormonal decline. **Participants:** Twenty subjects used skincare (The Essential Six, RATIONALE, Victoria, Australia), comprising solar protection by day and repair night for 12 weeks. No other skincare or aesthetic treatments were used during the study. **Measurements:** Facial imaging was performed at baseline, and after 30, 60, and 90 days. **Participants completed self-assessments at each time point. Ten participants also received tailored Professional Formulations at days 30 and 60 to evaluate whether targeted in-clinic intervention enhanced outcomes compared to the remaining participants. Results:** This study was performed on twenty participants who were provided with a dedicated skincare regimen to be used over 90 days at home. Half of these subjects (10) were provided with additional in-clinic professional treatment. Fourteen of the full cohort (70%) showed improvements in oxidative stress, inflammation, wrinkle depth, and hydration. Of these fourteen, seven of them (35%) had received in-clinic professional treatments. Two participants (10%) experienced transient adverse responses during the study period. Both participants developed initial cutaneous reactivity, which resolved following temporary discontinuation of active ingredients and subsequent modification of their daily

skincare regimen. Conclusion: This study confirms that a targeted solar protection and repair regimen supports skin health during menopause, particularly when delivered through a combined approach composed of a structured at-home application with adjunctive clinical treatments, it yielded superior outcomes. Among the 10 participants receiving the combined approach, 70% reported improved outcomes and expressed intent to continue adjunctive treatments.

Keywords

Anti-Photoageing, Clinical Therapy, Estrogen Deficiency, Menopausal Skin, Skincare

1. Introduction

The menopause transition is a natural endocrine milestone characterised by a progressive decline in circulating estrogen, progesterone, and testosterone [1] [2]. Given the skin's dense expression of hormone receptors, this hormonal attenuation exerts profound effects on cutaneous physiology [2]-[7]. Historically underexplored, the dermatological consequences of menopause are now receiving increasing scientific attention. As the skin is a hormonally responsive organ, shifts in endocrine activity during perimenopause and menopause have measurable impacts on structural and functional skin parameters [6]-[11]. Estrogen, progesterone and androgens act on cutaneous receptors to modulate collagen synthesis, antioxidant defences, immune surveillance, and lipid barrier maintenance [2] [4]-[6] [12]. Disruptions to these systems during menopause can precipitate a cascade of adverse cutaneous outcomes, diminishing skin health and aesthetic appearance [4]-[6] [12]. Targeted dermatologic intervention during this period may therefore play a crucial role in restoring homeostasis and preserving skin vitality.

Given the growing recognition of menopause as a critical window for targeted dermatologic care, this research aims to address an underexplored clinical need: research-based, non-invasive interventions designed to mitigate the cutaneous impacts of hormonal decline. By intervening at the level of topical therapy, this study investigates whether structured, topical skincare can re-establish physiological equilibrium within the skin, thereby supporting health, vitality, and visual rejuvenation throughout the menopause transition.

2. Materials and Methods

2.1. Participants

In order to examine the physiological skin changes that occur in menopause and to determine the extent that a solar protective and solar repair skincare regime could play in alleviating undesirable dermatologic side effects, twenty female patients aged 37 to 63 years (mean age range: 47.95 years) with Fitzpatrick skin types I to V, comprising 65% perimenopausal and 35% postmenopausal subjects, were

enrolled in this prospective, open-label study. None were prior users of RATIONALE formulations. None of the patients had a history of any type of skin disease or had undergone a cosmetic procedure that affected the treatment areas within 2 years of this study. Informed consent was obtained for exclusive use of the prescribed regimen over a 90-day period, with abstention from other topical products and professional treatments (unless allocated).

2.2. Inclusion Criteria and Exclusion Criteria

Participants were selected following an initial phone-based screening process, during which they were asked to provide information regarding their menopausal status and any associated cutaneous concerns or changes. Eligibility required participants to commit to monthly diagnostic facial imaging sessions using VISIA® Complexion Analysis at baseline (Day 0), Day 30, Day 60, and Day 90. Additionally, participants needed to be available for in-clinic professional treatments, if selected as part of the intervention subgroup, and to abide by specific inclusion and exclusion criteria (Table 1). Participants were required to exclusively use the prescribed RATIONALE topical formulations for the duration of the study, with no concurrent use of other skincare products. Individuals scheduled for upcoming surgical procedures or medical interventions during the study period were excluded to minimise potential confounding factors.

Table 1. Inclusion and exclusion criteria.

Inclusion Criteria	Exclusion Criteria
<p><u>Specific</u></p> <ul style="list-style-type: none"> • Sex: female • Age: between 35 and 65 years old; • Phototype: no specification • Subjects with cutaneous concerns attributed to estrogen deficiency <p><u>General</u></p> <ul style="list-style-type: none"> • Healthy subject; • Subject having given his/her free informed, written consent; • Subject willing to adhere to the protocol and study procedures. 	<ul style="list-style-type: none"> • Subject with make-up, fake tan or SPF on the day of diagnostic facial imagery; • Use of topical or systemic treatment during the previous weeks liable to interfere with the assessment of the cutaneous acceptability/efficacy of the study product: <ul style="list-style-type: none"> - non-invasive procedures within previous month on the studied zones, - invasive procedures: <ul style="list-style-type: none"> + deep chemical peeling, Microneedling, laser resurfacing within previous 3 months on the studied zones. • Subject enrolled in another clinical trial during the study period (concerns the studied zone).

2.3. Topical Formulations

Each participant underwent a comprehensive skin consultation and diagnostic evaluation using VISIA® diagnostic facial imaging to facilitate the accurate and individualised prescription of topical formulations. Prior to imaging, the skin was cleansed using RATIONALE #4 The PreCleanse Balm followed by #4 The Cleanser to ensure complete removal of makeup, sunscreen, and surface impurities. At-

home treatment regimens were then tailored according to each participant's specific cutaneous needs as identified during the assessment.

A minimum of one formulation from each of the RATIONALE Essential Six Collections (**Table 2**) was prescribed, with all participants required to incorporate #3 The Tinted Serum SPF 50+, #4 The PreCleanse Balm, and #4 The Cleanser as mandatory components of their daily regimen. Each Collection contains specific set of active ingredients (**Appendix A**), combinations of skin identical ingredients and boosting actives. Additionally, 50% of the cohort received two targeted in-clinic professional treatments during the study period. Follow-up imaging was performed at 30, 60, and 90 days to monitor and record clinical and subclinical cutaneous changes.

Table 2. Formulations per collection.

Solar Protection Formulations			Solar Repair Formulations		
#1 Resilience	#2 Vitality	#3 Brilliance	#4 Integrity	#5 Clarity	#6 Renewal
Targets skin immunity, calming and soothing	Targets skin protection against oxidation, revitalizing	Targets skin protection against environmental damage including photodamage	Targets deep skin hydration, nourishment and barrier repair	Targets skin texture enhancement, evening skin tone and rebalancing pH	Targets skin cell renewal and rejuvenation
#1 The Serum	#2 The Serum	#3 The Tinted Serum SPF50+	#4 The Cleanser	#5 The Serum	#6 The Night Crème
#1 The Hydragel	#2 The Light Crème	#3 The Enriched Crème	#4 The Crème	#5 The Milk Concentrate	#6 The GelCrème
#1 The Mask	#2 The Mask		#4 The PreCleanse Balm	#5 The GelCrème	
#1 The Crème	#2 The Hydragel		#4 The Balm	#5 The Mask	

This paper evaluates the efficacy of selected formulations (highlighted in bold in **Table 2**) in addressing cutaneous concerns associated with estrogen-deficient skin.

2.4. *In-Vivo* Clinical Evaluation

An observational *in-vivo* study was conducted on a cohort of 20 subjects to evaluate the effects of daily application of RATIONALE's Essential Six formulations over a 90-day period. Each participant followed an individually tailored regimen, applying the formulations consistently across the study duration.

To objectively assess cutaneous changes, facial imaging was performed using

the VISIA® Complexion Analysis System (Canfield Scientific, NJ, USA). Standardised facial images were captured on clean, product-free skin at four key timepoints: baseline (prior to product initiation), Day 30, Day 60, and Day 90.

Quantitative data were collected across multiple VISIA-defined parameters. Spots were assessed to evaluate improvements in skin clarity and tone uniformity. Red Spots were analysed as indicators of subclinical inflammation and epidermal barrier impairment. Porphyrins were measured to observe shifts in bacterial colonisation and associated changes in skin pH. Brown Spots were evaluated to detect pigmentation changes resulting from oxidative stress and environmental exposure. Texture analysis was used to monitor variations in cutaneous topography, while Wrinkles provided insight into changes in wrinkle depth and skin hydration.

Following comprehensive consultations and in-depth dermatological analysis, 90% of study participants demonstrated signs of cutaneous sensitivity attributed to impaired epidermal barrier function. Clinical indicators included increased Trans-Epidermal Water Loss (TEWL), elevated skin pH, delayed wound healing, and reduced regenerative capacity.

In addition, 70% of the cohort exhibited rosacea-like symptoms, most notably centofacial erythema localised to the nasal region. Of these, 25% reported a family history of rosacea and indicated that symptom recurrence coincided with hormonal fluctuations associated with perimenopause and menopause. Furthermore, 65% of participants presented with xerosis, characterised by visible dryness and epidermal thickening.

2.5. Participant Subjective Assessments

Subjective evaluations were conducted using structured questionnaire (**Appendix B**) with data being collected at Days 30, 60, and 90 following the commencement of treatment. Participants were asked to identify perceived changes in their skin based on a predefined list of outcome measures. These included: skin feels more nourished, skin feels less inflamed, reduced redness, fewer breakouts and blemishes, increased hydration, skin feels stronger, skin is more resilient, and skin has a brighter more radiant complexion. Participants also had the option to report no noticeable change or condition of skin worsened to ensure comprehensive and unbiased self-reporting.

3. Results

Reductions in skin sensitivity of 53%, 69% and 76.9% were self-reported by subjects (**Figure 1**) and confirmed by investigator analysis at 30, 60 and 90 days post treatment. Similarly, reductions in cutaneous erythema were reported and confirmed at 30, 60 and 90 days of 69.2%, 84.6% and 69.2% post treatment.

Skin dehydration is a common dermatologic consequence of menopause. Alleviation of this condition of 78.57% was self-reported (**Figure 2**) and confirmed by investigator analysis at 30, 60 and 90 days post treatment.

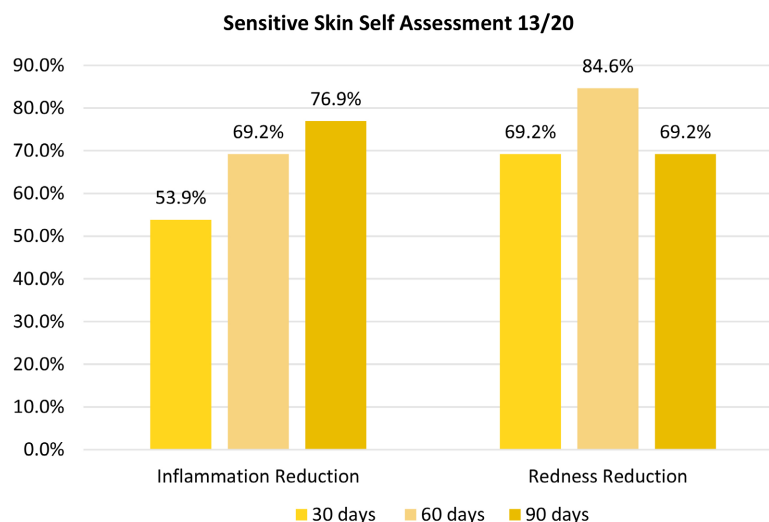


Figure 1. Sensitive skin self-assessment after using the specific at-home skincare regimen for 30, 60 and 90 days. Any improvement over 50% is considered a significant skin sensitivity reduction.

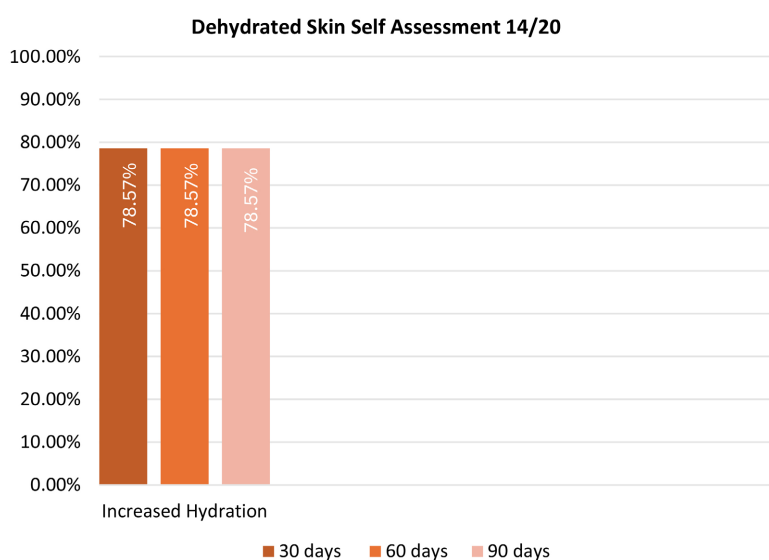


Figure 2. Dehydrated skin self-assessment after using the specific at-home skincare regimen for 30, 60 and 90 days. Any improvement over 50% is considered a significant increase in skin hydration.

Related to dehydration but manifesting as easily irritated and tight, flaky skin is commonly reported in menopause. Improvements in skin dryness of 76.9% and 84.6% were self-reported (**Figure 3**) and confirmed by investigator analysis at 30, 60 and 90 days post-treatment.

Loss of skin luminosity and an accompanying complexion dullness are commonly reported by perimenopausal, menopausal and post-menopausal women. Improvements in skin clarity and radiance of 36.3%, 63.6% and 90.9% were self-reported by subjects (**Figure 4**) and confirmed by investigator analysis at 30, 60 and 90 days.

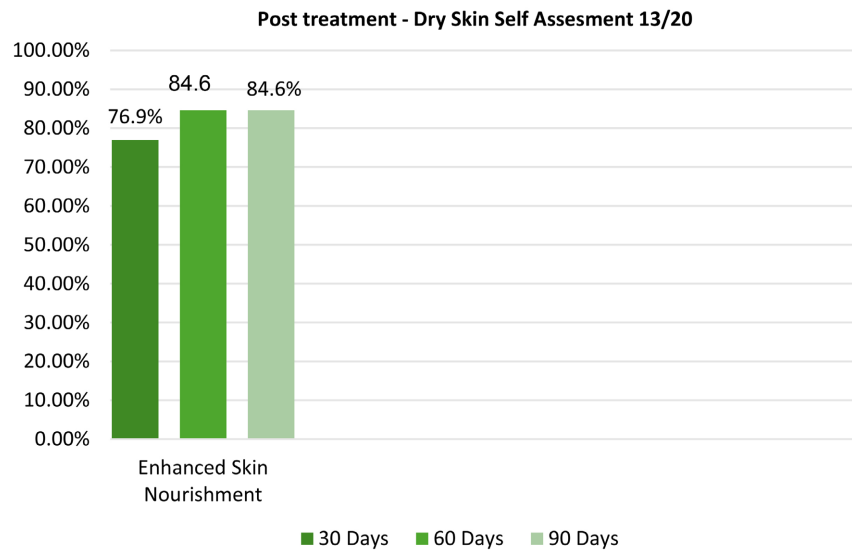


Figure 3. Dry skin self-assessment after using the specific at-home skincare regimen for 30, 60 and 90 days. Any improvement over 50% is considered a significant skin dryness reduction.

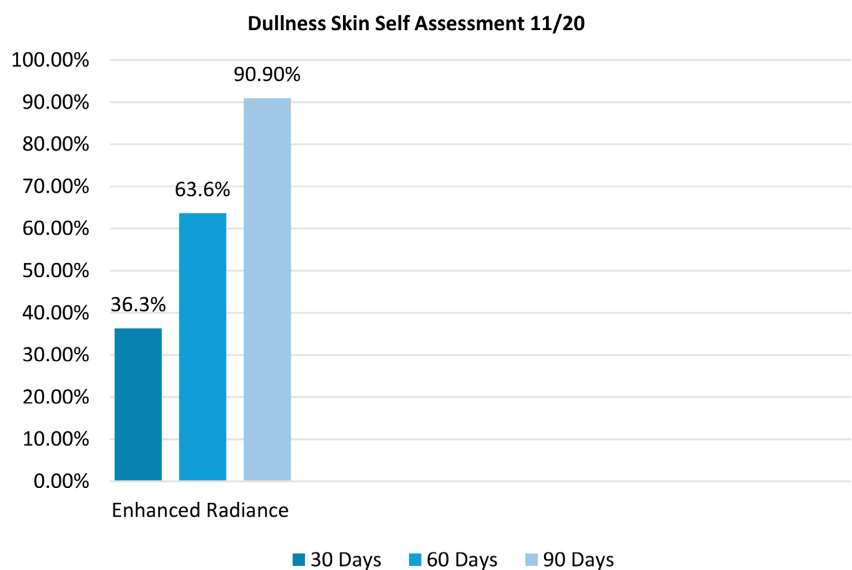


Figure 4. Dullness skin self-assessment after using the specific at-home skincare regimen for 30, 60 and 90 days. Any improvement over 50% is considered a significant increase in skin radiance.

Red Areas (on the forehead and cheeks) were examined in this study to identify improvement in a variety of potential skin conditions that could be exacerbated by sun damage (inflammation, rosacea etc.). This patient experienced a 24% decrease in Red Spots (Figure 5).

Wrinkles are defined as folds or creases in the skin, which are known to be associated with a decline in skin elasticity and are often considered to be a result of excessive sun exposure over time. The baseline results for this patient were 13% and increased to 57% over a 12-week period (Figure 6).



Figure 5. Visible improvements in erythema after using RATIONALE Essential Six Regimen (#1 The Serum, #2 The HydraGel, #3 The Enriched Crème, #3 The Tinted Serum, #4 The Crème, #4 The Pre Cleanse Balm, #4 The Cleanser, #5 The Serum and #6 The Night Creme) for 12 weeks and two professional in-clinic treatments. Baseline (L) 90 Days (R).



Figure 6. Visible improvements in hydration and wrinkle depth after using RATIONALE Essential Six Regimen (#1 The Serum, #1 The HydraGel, #3 The Tinted Serum, #4 The Crème, #4 The Pre Cleanse Balm, #4 The Cleanser, #4 The Eye Crème and #5 The Milk Concentrate) for 12 weeks and two professional in-clinic treatments. Baseline (L) 90 Days (R).

Wrinkles are defined as folds or creases in the skin, which are known to be associated with a decline in skin elasticity and are often considered to be a result of excessive sun exposure over time. The baseline results for this patient were 9% and increased to 99% over a 12-week period (**Figure 7**).

Red Areas were examined in this study to identify improvement in a variety of potential skin conditions that could be exacerbated by sun damage (inflammation, rosacea etc.). This patient experienced a 32% decrease in Red Spots (**Figure 7**).



Figure 7. Visible improvements in wrinkle depth, erythema and skin hydration after using RATIONALE Essential Six Regimen (#1 The Serum, #2 The Light Crème, #3 The Tinted Serum, #4 The Pre Cleanse Balm, #4 The Cleanser, #5 The GelCrème and #6 The GelCrème) for 12 weeks and two professional in-clinic treatments. Baseline (L) 90 Days (R).

Tolerability and Adverse Events

Two participants (10%) experienced transient adverse responses:

Participant A exhibited mild cutaneous reactivity following four weeks of daily use of the prescribed skincare regimen. Clinical presentation included itching localised to the lower face and the emergence of small pustular lesions on the neck and décolletage. The adverse response was managed through the temporary cessation of active ingredients and simplification of the at-home regimen. Upon gradual reintroduction, both Niacinamide and Bakuchiol were successfully tolerated by Day 60.

Participant B experienced cutaneous sensitivity within two weeks of initiating the prescribed regimen. The subject presented with erythema, stinging sensations, and xerosis. These symptoms resolved following the temporary suspension of active ingredients and simplification of the at-home regimen. Successful reintroduction of Niacinamide was achieved by Day 60 in the form of #1 Crème, following an unsuccessful attempt with #1 The Serum, which resulted in a recurrence of sensitivity.

These outcomes underscore the necessity of individualised treatment planning for sensitive phenotypes.

4. Discussion

Estrogen, plays a pivotal role in maintaining skin homeostasis by binding to specific estrogen receptors expressed in key cutaneous cells, including keratinocytes, fibroblasts, sebaceous glands, hair follicles, and immune cells such as Langerhans and macrophages [2]-[4] [6] [7] [9] [12]-[14]. Upon binding to these receptors, estrogen activates or suppresses specific genes, regulating essential skin functions

such as collagen production, lipid synthesis, inflammatory control, and the maintenance of epidermal barrier integrity [2]-[4] [7] [9] [12] [15]. Notably, estrogen enhances the skin's antioxidant capacity by upregulating the expression of antioxidant enzymes such as Superoxide Dismutase (SOD) Glutathione Peroxidase (GPx), thereby contributing to the reduction of oxidative stress [4] [9] [16] [17].

During perimenopause and post-menopause, diminished estrogen levels disrupt these processes, manifesting as structural and functional alterations [2] [4] [6]. Reduced fibroblast activity impairs collagen and elastin synthesis, causing dermal thinning, decreased elasticity, and wrinkle formation. [4] [5] [18]. Attenuated sebaceous and lipid function compromises the epidermal barrier, promoting xerosis, rough texture, and increased transepidermal water loss [18]. Dysregulated inflammatory signaling heightens cutaneous reactivity, while diminished antioxidant defenses exacerbate oxidative stress, leading to dullness and uneven tone [4] [5] [18]. Concurrently, impaired estrogen-mediated modulation of Langerhans cells and macrophages compromises immune surveillance and reparative capacity [3] [13].

Though discussed less frequently, progesterone and testosterone also influence skin physiology during peri-menopause and post-menopause. The natural decline in progesterone levels affects the brain's chemical signalling systems—most notably the GABA system—which plays a key role in maintaining calmness and balance, as well as supporting emotional stability, focus, and sleep [19]. These functions are indirectly linked to skin health through elevated cortisol levels. Elevated cortisol is associated with impaired wound healing, increased collagen and elastin degradation, and amplified inflammatory processes [20]. Furthermore, sleep disruption has been clinically correlated with impaired skin barrier function, increased transepidermal water loss (TEWL), delayed cellular repair processes, and contributes to a dull, lackluster complexion [21]. Progesterone plays a modulatory role in cutaneous homeostasis, contributing to the regulation of inflammatory responses within the skin and influencing sebaceous gland activity to support balanced sebum production [1] [2].

Testosterone, an androgen with known roles in collagen maintenance and structural support via musculoskeletal systems, influences cutaneous function by stimulating sebaceous gland activity [1] [17] [22] [23]. During periods of hormonal fluctuation, the pro-inflammatory and pro-oxidative effects of androgens may become pronounced, often manifesting clinically as nodulocystic acne predominantly localised to the lower facial region [1] [5] [24].

The integration of a structured daily at-home regimen, comprising targeted solar protection and reparative interventions, in conjunction with adjunctive clinical therapies, demonstrated significant efficacy in supporting cutaneous health in estrogen-deficient skin [25]-[29]. Clinical treatment regimens that were individually tailored according to cutaneous presentation, incorporated customised topical pharmacologic agents in combination with LED light therapy [26] [27]. This dual-modality approach yielded superior clinical outcomes, substantiating the role of combined photoprotective and reparative strategies with in-clinic treat-

ments in mitigating menopausal skin changes [25]-[30]. Among participants receiving professional in-clinic treatments, 70% reported measurable improvement in skin quality, accompanied by enhanced self-perception, self-esteem, and confidence.

Further knowledge, based on the reported adverse responses, confirmed the need for targeted and personalised skincare regimen, especially for sensitive skins. While two participants initially reacted mildly to Niacinamide and Bakuchiol specifically, their skins showed better tolerability by day 60. This was made possible by simplifying their skincare regimen to remove the incriminated ingredients for a few weeks all the while building up their skin resilience and finally reintroducing gradually the ingredients.

The potent agents, although designed for the less resilient skins, can occasionally trigger reactions depending on the concentration and whether the skin it is applied to has an impaired skin barrier.

The documented improvements reflect the potency of the RATIONALE Essential Six in modulating skin inflammation, oxidative stress, and barrier function during hormonal decline [27]-[29]. The synergistic inclusion of antioxidants, biolipids, anti-inflammatory actives, barrier-repair agents, and photoprotective compounds is consistent with current mechanistic understanding of menopausal skin physiology.

The authors acknowledge the limitations of the study. Due to resources restrictions, the study group counted only twenty participants who had never been exposed to the skincare products chosen so that can represent their own controls. The products were presented and used in an open-label manner and was performed by the sponsors staff members, which assisted in understanding how to best tailor the skincare regimen based on the skin types and needs but also could be viewed as biased. Future research will further elucidate ingredient-specific contributions in a close-label manner and via an external lab as well as explore expanded treatment algorithms incorporating in-clinic interventions.

5. Conclusion

The findings of this 12-week study affirm the efficacy of the RATIONALE Essential Six regimen in restoring cutaneous health during the menopause transition. The combination of structured at-home application with adjunctive clinical therapies yielded superior outcomes, substantiating a dual-modality approach to optimising menopausal skin care.

Disclosure

The authors disclose that this study was entirely funded by RATIONALE Skincare Pty Ltd., Victoria, Australia.

Conflicts of Interest

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

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Appendix A. Detailed Ingredients Complexes Per Collection

	Solar Protection Formulations			Solar Repair Formulations		
	#1 Resilience	#2 Vitality	#3 Brilliance	#4 Integrity	#5 Clarity	#6 Renewal
Vitamins	Niacinamide Panthenol Cyanocobalamin Pyridoxine Tocopherol	Retinol Ascorbyl Tetraisoalmitatesodium Ascorbyl Phosphate Ascorbyl Glucoside Tocopherol Tocopheryl Acetate Tocotrienols	Niacinamide Tocopherol, Tocopheryl Acetate, Tocotrienols 7-Dehydrocholesterol	Panthenol Retinyl Palmitate Tetrahexyldecyl Ascorbate Tocopherol Tocotrienols 7-Dehydrocholesterol		Retinal, Retinol Bakuchiol (Vitamin A Analog) Nicotiana Benthamiana Hexapeptide-40 Sh-Polypeptide-76 (Vitamin A Boosters) Xanthophylls (Vitamin A Boosters) Tocopherol
AHA & BHA					Lactic Acid Glycolic Acid Citric Acid Malic Acid Tartaric Acid Salicylic Acid	
Complex And Essential Fatty Acids	Phytosphingosines Sphingosines Phospholipids Ceramide Ap, Eop, Eos, Ng, Np, Ns Cholesterol Glycosphingolipids	Phytosphingosines Sphingosines Phospholipids Ceramide Ap, Eop, Eos, Ng, Np, Ns Cholesterol Glycosphingolipids	Phytosphingosines Sphingosines Phospholipids Ceramide Ap, Eop, Eos, Ng, Np, Ns Cholesterol Glycosphingolipids	Arachidyl Propionate Ethyl Linolenate Phytosphingosines Sphingosines Phospholipids Ceramide Ap, Eop, Eos, Ng, Np, Ns Cholesterol	Phytosphingosines Sphingosines Phospholipids Ceramide Ap, Eop, Eos, Ng, Np, Ns Cholesterol	Phytosphingosines Sphingosines Phospholipids Ceramide Ap, Eop, Eos, Ng, Np, Ns Cholesterol Glycosphingolipids Linolenic Acid Linoleic Acid
Amino Acids	Zinc Gluconate Magnesium Aspartate Copper Gluconate Alanine Lysine Arginine Tyrosine Phenylalanine Proline Threonine Valine Isoleucine Sodium Benzoate Citric Acid Histidine Collagen Amino Acids	Glycine Serine Aspartic Acid Leucine	Zinc Gluconate Magnesium Aspartate Copper Gluconate Alanine Lysine Arginine Tyrosine Phenylalanine Proline Threonine Valine Isoleucine Sodium Benzoate Citric Acid Histidine	Zinc Gluconate Magnesium Aspartate Copper Gluconate Alanine Lysine Arginine Tyrosine Phenylalanine Proline Threonine Valine Isoleucine Sodium Benzoate Citric Acid Histidine	Zinc Gluconate Magnesium Aspartate Copper Gluconate Alanine Lysine Arginine Tyrosine Phenylalanine Proline Threonine Valine Isoleucine Sodium Benzoate Citric Acid Histidine	Zinc Gluconate Magnesium Aspartate Copper Gluconate Alanine Lysine Arginine Tyrosine Phenylalanine Proline Threonine Valine Isoleucine Sodium Benzoate Citric Acid Histidine
Minerals	Zinc Gluconate Magnesium Aspartate Copper Gluconate	Zinc Gluconate Magnesium Aspartate Copper Gluconate	Zinc Oxide Zinc Gluconate Magnesium Aspartate Copper Gluconate	Zinc Gluconate Magnesium Aspartate Copper Gluconate	Zinc Gluconate Magnesium Aspartate Copper Gluconate Zinc PCA	Zinc Gluconate Magnesium Aspartate Copper Gluconate
Peptides, Proteins & Enzymes	Acetyl Hexapeptide-37 Acetyl Octapeptide-3 Hexapeptide-10 Betaine	Superoxide Dismutase Glutathione Carnosine	Keratin Acetyl Tetrapeptide-22	Oligopeptide-1 Acetyl Hexapeptide-37	Acetyl Hexapeptide-37 Hexapeptide-10	Acetyl Hexapeptide-51 Amide Tripeptide-10 Citrulline Hexapeptide-10 Tripeptide-9 Citrulline, Tripeptide-1, Acetyl Tetrapeptide-2

Continued

Ferments & Algae	Leuconostoc/Radish Root Ferment Filtrate			Yeast Extract	Bifida Ferment Lysate Pseudoalteromonas Ferment Extract Micrococcus Lysate Plankton Extract	
Natural Moisturising Factor & Analogs	Sodium Hyaluronate	Sodium Hyaluronate Betaine	Sodium Lactate Urea Sodium Hyaluronate	Zinc Pca Sodium Hyaluronate	Sodium Hyaluronate Betaine	
Sugar	Diglycosyl Gallic Acid	Fructose Maltose Trehalose Glucose Inositol	Sorbitol	Saccharide Isomerate	Glucose	
Others	Glycyrrhetic Acid Allantoin	Ubiquinone Melanin Bisabolol Lycopene	Melanin Bisabolol Allantoin	Piroctone Olamine	Bisabolol Glycyrrhetic Acid Allantoin Hydrolyzed RNA Hydrolyzed DNA	
Australian Botanicals Extracts and Other Plant Extracts	Aloe Barbadensis (Aloe Vera) Leaf Juice Melanoxylon Leaf Extract Banksia Serrata Flower Extract Borago Officinalis Seed Oil Brachychiton Acerifolius Flower Extract Acerifolius Flower Extract Davidsonia Pruriens (Tea Tree) Leaf Extract Fruit Extract Hibbertia Scandens Leaf Extract Hibiscus Sabdariffa Flower Extract Honey Extract Melaleuca Alternifolia (Tea Tree) Leaf Extract Santalum Spicatum (Sandalwood) Seed Oil Tasmania Lanceolata Fruit Extract Telopea Speciosissima Flower/Leaf Extract Terminalia Ferdinandiana Fruit Extract Terminalia Fruit Extract	Santalum Spicatum (Sandalwood) Seed Oil Brachychiton Acerifolius Flower Extract Banksia Serrata Flower Extract Telopea Speciosissima Flower/Leaf Extract Davidsonia Pruriens Fruit Extract Melaleuca Alternifolia (Tea Tree) Leaf Extract Tasmania Lanceolata Fruit Extract Anigozanthos Flavidus Flower Extract Ferdinandiana Fruit Extract Hibiscus Sabdariffa Flower Extract Vaccinium Macrocarpon (Cranberry) Seed Oil, Durvillaea Potatorum Extract, Aloe Barbadensis Leaf Juice Solanum Lycopersicum (Tomato) Seed Oil Myrtus Communis Leaf Extract Kunzea Pomifera Fruit Extract Jjoba Fruit Extract Oil/Macadamia Seed Oil Esters Ligustrum Lucidum Seed Extract	Argania Spinosa Kernel Oil Voandzeia Subterranea Seed Extract Luehmannii Fruit Extract Aspalathus Linearis Leaf Extract Camellia Sinensis Leaf Extract	Acacia Decurrens Flower Wax Banksia Serrata Flower Extract Santalum Spicatum (Sandalwood) Seed Oil Telopea Speciosissima Flower/Leaf Extract Tasmania Lanceolata Fruit Extract Zea Mays (Corn) Oil Hibiscus Sabdariffa Flower Extract Aloe Barbadensis (Aloe Vera) Leaf Juice Melaleuca Alternifolia (Tea Tree) Leaf Extract Terminalia Ferdinandiana Fruit Extract Brachychiton Acerifolius Flower Extract Davidsonia Pruriens Fruit Extract Barklya Syringifolia Flower/Leaf Extract Jjoba Esters	Vaccinium Myrtillus Fruit Extract Saccharum Officinarum (Sugar Cane) Extract Santalum Spicatum (Sandalwood) Seed Oil Acer Saccharum (Sugar Maple) Extract Brachychiton Acerifolius Flower Extract Banksia Serrata Flower Extract Tasmania Lanceolata Fruit Extract Lanceolata Fruit Extract Santalum Acuminatum Fruit Extract Hibiscus Sabdariffa Flower Extract Telopea Speciosissima Flower/Leaf Extract Melaleuca Alternifolia (Tea Tree) Leaf Extract Davidsonia Pruriens Fruit Extract Terminalia Ferdinandiana Fruit Extract Pelargonium Graveolens Oil Melaleuca Alternifolia (Tea Tree) Leaf Extract Mentha Australis Leaf Extract	Banksia Serrata Flower Extract Santalum Spicatum (Sandalwood) Seed Oil Santalum Acuminatum Fruit Extract Santalum Acuminatum Fruit Extract Acacia Victoriae Fruit Extract Arabidopsis Thaliana Extract

Appendix B. Questionnaire

Menopause and Skin Health Questionnaire

Please select the box that best describes your current stage.

- | | |
|---|---|
| <input type="checkbox"/> Pre-menopause | No menopause-related symptoms; menstrual cycles are still regular. |
| <input type="checkbox"/> Perimenopause | Transition phase with hormonal fluctuations, irregular periods, and symptoms such as hot flashes, mood changes, and sleep disturbances. |
| <input type="checkbox"/> Menopause | No menstrual period for 12 consecutive months; marks the end of reproductive years. |
| <input type="checkbox"/> Post-menopause | Hormone levels have stabilised following menopause. |
| <input type="checkbox"/> Surgical- or Induced-Menopause | Menopause resulting from the removal of ovaries or medical treatments, causing an abrupt transition. |

How would you categorise your skin before starting RATIONALE (Select all that apply)

- Dry
- Sensitive
- Oily
- Breakout-prone
- Dehydrated
- Unpredictable
- Itchy
- Dull

Skin Changes (30 Days) What improvements have you noticed?

- Dehydrated
- Unpredictable
- Itchy
- Dull
- Dehydrated
- Unpredictable
- Itchy
- Dull
- No noticeable change
- Condition of skin worsened

Skin Changes (60 Days) What improvements have you noticed?

- Dehydrated
 - Unpredictable
-

Continued

- Itchy
- Dull
- Dehydrated
- Unpredictable
- Itchy
- Dull
- No noticeable change
- Condition of skin worsened

Skin Changes (90 Days) What improvements have you noticed?

- Dehydrated
- Unpredictable
- Itchy
- Dull
- Dehydrated
- Unpredictable
- Itchy
- Dull
- No noticeable change
- Condition of skin worsened

Product Suitability: Did you feel the products were suited to your skin?

- Yes
- No

Professional Treatments: Did you receive professional Treatments?

- Yes
- No

Professional Treatments: Will you continue to receive professional treatments?

- Yes
- No

Product Experience: What were you're favourite products to use and why?

Product Experience: Which products do you feel provided the best results and why?

Product Experience: Have you learned anything new about you skin during this journey?

Product Experience: What information was most valuable to you?

Product Experience: How have your skin improvements made you feel?

Product Experience: Did you have any preconceived notions about RATIONALE or our products?

Continued

Yes

No

Product Experience: Will you continue using RATIONALE products?

Yes

No

Recommendation: How likely are you to recommend RATIONALE to someone going through their Menopause Journey?

Yes

No
