

Review Article

Fasting for clearer skin: Review article investigating the impact of intermittent fasting on dermatological conditions

Hiba Fathimathul Harshiba¹, Nabeel Muhammed Rafi¹

¹Department of General Medicine, District Hospital, Kannur, Kerala, India.



***Corresponding author:**
Hiba Fathimathul Harshiba,
Department of General
Medicine, District
Hospital, Kannur, Kerala, India.
drhibabasheeroofficial@gmail.
com

Received: 02 August 2024
Accepted: 29 August 2024
Published: 04 October 2024

DOI
10.25259/CSDM_129_2024

Quick Response Code:



ABSTRACT

Intermittent fasting (IF) is increasingly recognized for its metabolic benefits and potential therapeutic effects on skin health. IF has gained widespread popularity across all age groups partly due to social media and its alleged health benefits. This paper explores current literature and research findings on IF, focusing particularly on its implications for dermatological conditions. IF is characterized by periodic eating and fasting intervals, which have been demonstrated to impact hormone control, metabolic functions, and cellular repair mechanisms. Through its impacts on inflammation, oxidative stress, and insulin sensitivity, IF may have an impact on dermatological diseases such as acne, eczema, and psoriasis. This review summarizes the mechanisms underlying IF, discusses clinical evidence linking IF to improvements in skin health, and provides practical insights for its implementation. This study also tries to educate the public and medical professionals about the possible advantages of IF in treating dermatological diseases by summarizing the information that is currently available and outlining areas that warrant further investigation.

Keywords: Intermittent fasting, Skin health, Nutrition and skin, Ramadan fasting, Dermatological conditions

INTRODUCTION

Health-related topics have attracted a significant amount of attention in recent years. There is evidence that between 35% and 69% of patients seeking dermatological treatments use alternative medicine at some point in their lives.^[1] Diet and nutrition are particularly important components of integrative medicine methodologies. Skin problems can be influenced by underlying nutritional variables that can be addressed using food-based treatments in dermatology. This approach provides a whole inside-out treatment plan.^[1]

Intermittent fasting (IF) is a common dietary strategy that alternates between regular intervals of calorie-restricted eating and abstention from food. IF activities have been widely used for religious, spiritual, and cultural purposes in both ancient and modern societies. IFs of today involve limiting calorie intake to set window intervals and abstaining from customary societal eating behaviors, which correspond to the 24-hour cycle of light and day.^[2]

IF includes time-restricted eating like the 16/8 diet, where eating is limited to an 8–10-h window daily, and alternate day fasting (ADF), where fasting days are alternated with normal eating days. Recently, modified ADF has emerged, allowing up to 40% of daily calories on fasting days for better adherence.^[3]

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 License, which allows others to remix, transform, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

©2024 Published by Scientific Scholar on behalf of CosmoDerma

Muslims highly value Ramadan, the ninth month of the Islamic lunar calendar (Al-Hijra), as it marks the period when the Quran was revealed. Muslims have been fasting annually for many centuries, abstaining not only from food and drink but also from smoking, medications, and sexual activity during daylight hours.^[4] Inversely from other forms of fasting and diet regimens, the Ramadan fasting follows the circadian rhythm.^[5]

Calorie restriction and fasting have a significant impact on skin health and can also influence the progression of skin diseases such as atopic eczema, psoriasis, and acne. Restricting calories changes the way the skin behaves. According to research by Forni *et al.*, mice subjected to prolonged calorie restriction demonstrated enhanced heat regulation, higher metabolism in the dermis (the deeper layer of skin), and increased stem cell activity in the epidermis (the outer layer of skin). These adaptations include reduced fat storage and enhanced blood vessel formation, helping the skin cope with limited energy intake.^[5,6] Skin hydration and skin roughness improved with fasting, and individuals also reported enhancements in mental wellness, including increased happiness, confidence, and optimism.^[1] There is growing evidence that IF improves exercise performance and health in ways that go beyond weight loss in the short- and long terms. Nevertheless, there are still conflicting data regarding the best ways to employ IF to enhance health and well-being, despite its extensive use.^[2]

METHODS

We used PubMed and Google Scholar to search the literature on the impact of IF on skin health. Utilizing search terms such as “intermittent fasting,” “skin health,” “nutrition and skin,” “Ramadan fasting,” and “dermatological conditions,” we conducted an extensive literature search. This approach allowed us to identify relevant research published over the past 10 years (2014–2024).

In particular, we considered reviews that focused on IF and skin health as well as observational studies, clinical trials, and peer-reviewed literature. Articles that were published before 2014, not in English, or not directly linked were excluded from the study.

We extracted data on skin health outcomes, fasting procedures, sample size, and study design. We combined the data to identify trends and give an overview of the effects of IF on skin health.

RESULTS

Data for this review was collected from 23 articles published between 2014 and 2024. The studies included a range of methodologies, including randomized controlled trials (RCTs),

observational studies, systematic reviews, and experimental research. The findings from these studies, organized in ascending order of publication year, are compiled and summarized in Table 1. This table presents a comprehensive overview of the effects of IF on skin health, highlighting key insights and outcomes across various research designs and populations.

DISCUSSION

The reviewed evidence suggests that IF can offer numerous benefits for skin health, primarily through several crucial physiological mechanisms. This discussion integrates findings on the several types of IF, the underlying mechanisms, its effects on inflammation, specific dermatological conditions, and skin cancer. Furthermore, it explores the advantages, potential risks, and considerations associated with IF, as well as its implications in chronotherapy and chronomedicine.

TYPES OF IF AND MECHANISM

There are various types of IF, including complete ADF, ADF, time-restricted feeding, and religious fasting, as depicted in Table 2.^[7]

During fasting, liver glycogen stores are depleted, leading to reduced serum glucose levels. The body subsequently starts to use free fatty acids and ketone bodies as fuel. β -hydroxybutyrate and acetoacetate, two ketone bodies, are necessary for the brain in addition to glucose. Fatty acids and ketogenic amino acids are converted by the liver into these ketone bodies. Glycerol and ketone bodies aid in gluconeogenesis during prolonged fasting, supplying the brain with approximately 80 g of glucose each day. Long stretches of time without meals are possible, thanks to this adaptability. Other creatures, such as yeast and penguins, have been shown to exhibit comparable metabolic reactions. For possible therapeutic insights, it is critical to comprehend how different carbon sources during fasting affect cellular protection and aging.^[8] Figure 1 illustrates the various stages of fasting. During the first 0–4 h of fasting, the body uses glucose from recent meals. From 4 to 8 h, glycogen stores deplete, prompting the liver to convert fatty acids into ketones, which marks the beginning of detoxification. Detoxification involves the removal of metabolic waste and toxins from the body, facilitated by the liver and other organs. Between 8 and 16 h, as ketone production increases and glucose levels fall, detoxification becomes more pronounced, helping to reduce oxidative stress and clear out accumulated cellular debris. By 16–24 h, the body relies primarily on ketones, which leads to more effective detoxification and cellular repair, as the body becomes more adept at removing toxins and maintaining lower oxidative stress levels.^[9]

The Fasting Mimicking Diet (FMD) has a variety of effects on the skin system. Reduction of pro-growth signaling

Table 1: Reference-wise summary.

Author (s) with year	Type of study	Findings
Longo and Mattson (2014)	Review	Discusses molecular mechanisms and clinical applications of fasting, with implications for skin health.
Satoh <i>et al.</i> (2015)	Experimental study	Evaluates the effect of <i>Bifidobacterium breve</i> on ultraviolet-induced skin photoaging in mice.
Crowther (2016)	Review/experimental study	Understanding effects of topical ingredients on electrical measurement of skin hydration.
Galimberti and Mesinkovska (2016)	Review	Skin findings associated with nutritional deficiencies, including effects of fasting on skin health.
Antunes <i>et al.</i> (2017)	Experimental study	Fasting increases melanoma cell sensitivity to cisplatin-induced death.
Mattson <i>et al.</i> (2017)	Review	The review finds that IF can improve metabolic health, reduce disease risk, and potentially extend lifespan through mechanisms such as enhanced cellular stress resistance.
Quran	Religious text	Reference to fasting practices in the context of religious fasting and its potential health implications.
Soares <i>et al.</i> (2018)	Review	Reviews the relationship between headaches and food abstinence, relevant for understanding fasting-related side effects.
Bragazzi <i>et al.</i> (2019)	Review	Comprehensive review of fasting's impact on skin anatomy, physiology, and physiopathology.
Damiani <i>et al.</i> (2019)	Multicenter study	Examines the impact of Ramadan fasting on the PASI score in psoriatic patients.
Grine <i>et al.</i> (2019)	Observational study	Investigates the effects of time-restricted circadian fasting on hidradenitis suppurativa.
Adawi <i>et al.</i> (2019)	Multicenter study	Discusses impact of intermittent fasting on psoriasis and related disorders.
Dong <i>et al.</i> (2020)	Review	Examines IF as a heart-healthy dietary pattern, potentially affecting skin health indirectly.
Melli <i>et al.</i> (2020)	Controlled study	Investigates gut microbiota in children with atopic dermatitis, highlighting interactions between diet and skin conditions.
Dall'Oglio <i>et al.</i> (2021)	Review	Review of the evidence on diet and acne from 2009 to 2020.
Bragazzi <i>et al.</i> (2021)	Observational study	Multicenter study on the effects of time-restricted fasting on dermatological disorders.
Cardinali <i>et al.</i> (2021)	Book chapter	Provides a detailed account of chronotherapy and its potential implications for dietary patterns and skin health.
Nowosad and Sujka (2021)	Review	Analyzes several types of IF and their effects on weight loss and diabetic parameters.
Mandal <i>et al.</i> (2022)	Review	Discusses IF's effects on health and exercise performance, with implications for skin health.
Meixiong <i>et al.</i> (2022)	Systematic review	Examines the relationship between diet and acne, including the effects of intermittent fasting.
Almutairi and Shaaban (2022)	Observational study	Assesses the clinical implications of intermittent Ramadan fasting on stable plaque psoriasis.
Colombarolli <i>et al.</i> (2022)	Clinical study	Investigates food craving and disordered eating in low-carb dieters and its association with intermittent fasting.
Maloh <i>et al.</i> (2023)	Randomized controlled trial	The fasting-mimicking diet improved skin hydration, texture, and overall skin assessment.
Rotter <i>et al.</i> (2023)	Randomized controlled trial	Examines the combined effects of hypnotherapy, IF, and exercise on atopic dermatitis.
Song and Kim (2023)	Narrative review	Reviews the beneficial effects of IF, including potential impacts on skin health.
Julie Nutrition (2024)	Online article	Discusses the benefits, drawbacks, and important considerations of IF.

PASI: Psoriasis area and severity index, IF: Intermittent fasting

Table 2: Types of intermittent fasting.

Types of intermittent fasting	Description
Complete alternate-day fasting	Involves alternating between days of fasting (without consuming high-calorie foods or drinks) and days of unrestricted eating.
Alternate-day fasting	Permits intake of 20–25% of daily caloric needs on fasting days. This method underpins the popular 5:2 diet, which restricts calories significantly for 2 days each week while allowing normal eating on the other 5 days.
Time-restricted feeding	Involves eating within a designated “food window” of several hours, such as an 8-hour period, followed by a fasting period of 16 hours. The length of eating and fasting windows can be adjusted.
Religious fasting	Encompasses various fasting practices performed for religious or spiritual reasons.



Figure 1: Stages of intermittent fasting, illustrated by Fathimathul Harshiba.

and increased cellular defense are two of the broad cellular and systemic changes that fasting induces in response to famine, which may help prevent disease and postpone aging. Replicating a water-only fast, FMD lowers the risk of age-related diseases, enhances the gut flora, diminishes oxidative stress, blocks the mTOR-S6K pathway, stimulates autophagy, and promotes tissue regeneration. According to several studies, FMD may prove to be a useful and affordable method of enhancing skin health.^[1]

Through the gut-skin axis, FMD may affect skin health by lowering intestinal inflammation and fostering good gut bacteria such as *Lactobacillaceae* and *Bifidobacteriaceae*, which are associated with better skin health. For example, eczema-affected children frequently have lower concentrations of these beneficial bacteria than do healthy controls.^[10] In addition, it was discovered in an animal study that oral supplementation with *Bifidobacterium breve* B-3, a member of the *Bifidobacteriaceae* family, protected against

ultraviolet (UV)-induced alterations in skin hydration and transepidermal water loss.^[11]

SYSTEMIC BENEFICIAL EFFECTS ON IF

IF has various advantages, such as lowering pro-inflammatory cytokines such as tumor necrosis factor-alpha (TNF- α) and interleukin (IL)-6 and blocking the NLRP3 inflammasome, which is essential for the activation of IL-1 β . Benefits related to metabolism include decreased levels of ghrelin, elevated levels of adiponectin and leptin, enhanced insulin sensitivity, and decreased levels of insulin, glycosylated hemoglobin, and fasting blood glucose. By increasing brain-derived neurotrophic factors and encouraging neuronal plasticity and regeneration, they also improve neuronal health. These methods, while still in their early phases, have demonstrated promise in the treatment of diabetes, cancer, polycystic ovarian syndrome, and a number of neurological, cardiovascular, and pulmonary conditions.^[12]

IMPACT OF IF ON VARIOUS DERMATOSES

Studies examining the effects of IF on various skin conditions have yielded diverse results. Notable results have been observed in the field of psoriasis. Psoriasis area and severity index (PASI) significantly decreased during Ramadan 2019, from an average of 4.36 ± 3.22 to 3.51 ± 1.26 , according to a prospective population-based observational study by Almutairi and Shaaban included 121 patients with plaque psoriasis. Significant drops in triglyceride and plasma glucose levels, as well as a rise in high-density lipoprotein cholesterol, were seen in conjunction with this improvement; however, there was no change in weight.^[13] Damiani *et al.* saw a similar decline in PASI, average -0.89 ± 1.21 , in a multicenter prospective observational research involving 108 psoriasis patients. The research discovered that whereas apremilast and phototherapy were associated with greater PASI scores after Ramadan, therapies including cyclosporine, anti-IL-17, and anti-TNF- α were associated with lower PASI scores.^[14] Improvements were noted in skin and joint complaints, along with a decrease in inflammatory markers, in a different multicenter trial conducted by Adawi *et al.* comprising 37 patients with psoriasis and psoriatic arthropathy.^[15]

During Ramadan, Damiani *et al.* conducted a multicenter observational study with 55 patients for hidradenitis suppurativa. The results showed a significant improvement in the International Hidradenitis Suppurativa Severity Score System (IHS4), with an average improvement of -0.85 ± 0.83 ($P < 0.0001$).^[14,16]

Acne is influenced by factors such as hormonal balance, sebum production, and inflammation.^[17] IF may positively impact acne by regulating hormonal levels and reducing insulin-like growth factor 1, which is known to exacerbate acne.^[18]

A comparative single-center clinical experiment by Rotter *et al.* with 20 patients looked at the effects of hypnotherapy, physical exercise, and IF in the context of atopic dermatitis during the COVID-19 pandemic. Standardized measures of quality-of-life revealed gains for the intervention group as well as decreases in pruritus and disease activity.^[19]

Numerous studies have demonstrated the anti-inflammatory and antioxidant properties of IF, suggesting that it may be good for overall health. It may even be able to delay the aging process of the skin and increase life expectancy, according to studies done on animal models.^[5]

FASTING AND SKIN CANCER

Studies have investigated how fasting regimens affect the risk of skin cancer. Antunes *et al.* studied the impact of calorie restriction (nutrient deprivation) combined with anti-cancer medications such as cisplatin on wild-type and BRAFV600E-mutated melanoma cell lines. Their results showed that cisplatin-induced cell death was more sensitive to occur in tumor cell lines that were fasting, even those that were especially resistant to pharmaceutical therapies. This result was explained mechanistically as apoptosis, which was triggered by the build-up of reactive oxygen species and the production of activating transcription factor 4 without causing stress to the endoplasmic reticulum. Furthermore, the research demonstrated that adding 2-deoxy-D-glucose improved this impact much more in SK Mel 28 cell lines.^[20]

POTENTIAL RISKS AND CONSIDERATIONS

Headaches, vertigo, polyuria (excessive urine), mood fluctuations, and lethargic behavior were the most often reported adverse consequences of fasting. Depending on the person, the severity of these symptoms could vary from minor to severe. A frequent problem linked to fasting is headaches in particular. They are mostly brought on by hypoglycemia, which is a decrease in blood sugar levels. Usually defined as diffuse and non-pulsatile headaches, these pains seem more like steady pressure than a throbbing one. They are often mild to moderate in severity and most often occur during the fasting phase, particularly after a person has been fasting for at least 8 hours. These symptoms are frequent and severe, which emphasizes the need for close observation and control when fasting, especially for those with preexisting health conditions.^[21]

Studies also show that while IF is effective for weight loss, it is associated with poorer eating attitudes. Participants on this diet reported increased binge eating, cognitive restriction, and food cravings. Those with disordered eating tend to disregard the context, frequency, and quantity of food, making choices based on beliefs rather than their actual needs.^[22]

Apart from this, fasting can lead to several potential adverse effects on the skin. Reduced water intake during fasting can cause dryness, making the skin dry and flaky.^[23] In addition, changes in diet or hormone levels may trigger or worsen acne, leading to breakouts.^[24] Inadequate nutrition and hydration during fasting might also result in a dull complexion.^[25]

Some people are not good candidates for IF, particularly those with cardiac issues or diabetes. Before making big changes to eating habits, it is best to speak with a doctor and a nutritionist. Men are usually allowed to fast for up to 16 hours, while women should avoid going over 14 hours to avoid hormonal imbalances. Nutrient-dense meals should be included in the fasting schedule to prevent inflammatory effects, and they should be flexible enough to accommodate individual patterns. To make sure they are properly fueled for high-intensity activity, endurance athletes may need to modify their fasting schedule. Children's greater energy needs and possible effects on focus make fasting inappropriate for them. People who are underweight should refrain from fasting since it could make their situation worse. It takes time to get used to IF, and it could be necessary to break bad habits and fight temptations. If they do not follow the fasting schedule, some people could feel guilty. A balanced approach can be ensured by contacting a nutritionist or dietitian. Appropriate nutrition during meal intervals is vital to preventing hunger and weakness.^[26]

CHRONOTHERAPY AND CHRONOMEDICINE

The management of skin problems appears to benefit from intermittent circadian fasting (ICF); however, the effects of this approach are yet unclear. The severity of skin problems, treatment reactions, and side effects are all known to be influenced by circadian cycles. An evaluation of ICF's effect on dermatological problems was conducted by prospective, multicenter observational research. An average age of 40.38 years was observed among the 72 patients, who had a range of skin problems. When the ICF period began (T0) and ended (T1), dermatologists evaluated the severity of the patient's symptoms. A substantial overall impact size of -0.58 (95% confidence interval -0.83 – -0.33 , $P < 0.0001$) was discovered in the trial despite no change in the median weight, suggesting a moderate effect. The improvements in clinical symptoms were likely due to changes in the biological clock rather than weight loss.^[27]

Chronotherapy considers the body's circadian rhythms to maximize medicinal treatments. It consists of two primary methods: (1) modifying patients' sleep-wake cycles to improve results in different diseases, and (2) utilizing circadian rhythms in therapeutic procedures to increase the efficacy of treatment.^[28] This indicates that considering circadian cycles in treatment strategies may contribute to

more effective management of various conditions, including dermatological disorders.

FUTURE PROSPECTS

A potentially effective strategy for controlling, treating, and partially preventing skin problems is diet. Notwithstanding the pragmatic consequences, this subject has not received enough attention in academic literature and needs more investigation. To carefully examine and compare different fasting protocols, including the use of fruits and vegetables for calorie and metabolic adjustments, high-quality RCTs should be carried out. Polyphenol-rich diets, for example, can provide photoprotective benefits to counteract or attenuate UV-induced skin inflammation, proliferation, DNA damage, and dysregulation of multiple cellular networks and pathways, including immunological responses.^[5]

CONCLUSION

While the literature on the impact of IF and other fasting regimens on skin health is currently limited and often of low quality, there is a strong need for evidence-based guidelines. IF has shown promising benefits, including improved skin health and protection against UV-induced damage. However, existing studies often involve small sample sizes and high non-responder rates, highlighting the need for larger, high-quality research to explore these effects comprehensively. Despite the potential benefits, such as increased sensitivity to treatments and reduced inflammation, patients should be educated about the importance of adherence to their treatments during fasting. Physicians should also be aware of rare dermatological conditions associated with fasting. Overall, while IF presents more benefits than demerits for skin health, further research is essential to fully understand its effects and establish clear clinical guidelines.

Ethical approval

The Institutional Review Board approval is not required.

Declaration of patient consent

Patient's consent was not required as there are no patients in this study.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

REFERENCES

1. Maloh J, Wei M, Hsu WC, Caputo S, Afzal N, Sivamani RK. The effects of a fasting mimicking diet on skin hydration, skin texture, and skin assessment: A randomized controlled trial. *J Clin Med* 2023;12:1710.
2. Mandal S, Simmons N, Awan S, Chamari K, Ahmed I. Intermittent fasting: Eating by the clock for health and exercise performance. *BMJ Open Sport Exerc Med* 2022;8:e001206.
3. Dong TA, Sandesara PB, Dhindsa DS, Mehta A, Arneson LC, Dollar AL, *et al.* Intermittent fasting: A heart healthy dietary pattern? *Am J Med* 2020;133:901-7.
4. Qoran. Surat 2 “Al-Baqarah”, Ayyat (verse) 183. Available from: <https://quran.com/2/183> [Last accessed on 2018 Dec 01].
5. Bragazzi NL, Sellami M, Salem I, Conic R, Kimak M, Pigatto PD, *et al.* Fasting and its impact on skin anatomy, physiology, and physiopathology: A comprehensive review of the literature. *Nutrients* 2019;11:249.
6. Forni MF, Peggia J, Braga TT, Chinchilla JEO, Shinohara J, Navas CA, *et al.* Caloric restriction promotes structural and metabolic changes in the skin. *Cell Rep* 2017;20:2678-92.
7. Nowosad K, Sujka M. Effect of various types of intermittent fasting (IF) on weight loss and improvement of diabetic parameters in human. *Curr Nutr Rep* 2021;10:146-54.
8. Longo VD, Mattson MP. Fasting: Molecular mechanisms and clinical applications. *Cell Metab* 2014;19:181-92.
9. Mattson MP, Longo VD, Harvie M. Impact of intermittent fasting on health and disease. *N Engl J Med* 2017;381:2541-51.
10. Melli LC, Carmo-Rodrigues MS, Araújo-Filho HB, Mello CS, Tahan S, Pignatari AC, *et al.* Gut microbiota of children with atopic dermatitis: Controlled study in the metropolitan region of São Paulo, Brazil. *Allergol Immunopathol (Madr)* 2020;48:107-15.
11. Satoh T, Murata M, Iwabuchi N, Odamaki T, Wakabayashi H, Yamauchi K, *et al.* Effect of *Bifidobacterium breve* B-3 on skin photoaging induced by chronic UV irradiation in mice. *Benef Microbes* 2015;6:497-504.
12. Mansilla-Polo M, Piquero-Casals J, Morgado-Carrasco D. Popular diets and skin effects: A narrative review. *Actas Dermosifiliogr* 2024;115:374-86.
13. Almutairi N, Shaaban D. Clinical implications of intermittent Ramadan fasting on stable plaque psoriasis: A prospective observational study. *Postepy Dermatol Alergol* 2022;39:368-74.
14. Damiani G, Watad A, Bridgewood C, Pigatto PD, Pacifico A, Malagoli P, *et al.* The impact of Ramadan fasting on the reduction of PASI score, in moderate-to-severe psoriatic patients: A real-life multicenter study. *Nutrients* 2019;11:277.
15. Adawi M, Damiani G, Bragazzi NL, Bridgewood C, Pacifico A, Conic RRZ, *et al.* The impact of intermittent fasting (Ramadan fasting) on psoriatic arthritis disease activity, enthesitis, and dactylitis: A multicentre study. *Nutrients* 2019;11:601.
16. Grine N, Hilhorst N, Michels N, Abbeddou S, De Henauw S, Lambert J. The safety and impact of a model of intermittent, time-restricted circadian fasting (“Ramadan fasting”) on hidradenitis suppurativa: Insights from a multicenter, observational, cross-over, pilot, exploratory study. *Nutrients* 2019;11:1781.
17. Song DK, Kim YW. Beneficial effects of intermittent fasting: A narrative review. *J Yeungnam Med Sci* 2023;40:4-11.
18. Meixiong J, Ricco C, Vasavda C, Ho BK. Diet and acne: A systematic review. *JAAD Int* 2022;7:95-112.
19. Rotter G, Teut M, Schleicher R, Dell’Oro M, Ortiz M, Binting S, *et al.* Hypnotherapy, intermittent fasting, and exercise group programs in atopic dermatitis: A randomized controlled explorative clinical trial during the COVID-19 pandemic. *J Integr Complement Med* 2023;29:99-110.
20. Antunes F, Corazzari M, Pereira G, Fimia GM, Piacentini M, Smaili S. Fasting boosts sensitivity of human skin melanoma to cisplatin-induced cell death. *Biochem Biophys Res Commun* 2017;485:16-22.
21. Soares AA, De Vasconcelos CA, Silva-Néto RP. Headaches and food abstinence: A review. *J Clin Case Stu* 2018;3. Doi: 10.16966/2471-4925.163.
22. Colombarolli MS, De Oliveira J, Cordás TA. Craving for carbs: Food craving and disordered eating in low-carb dieters and its association with intermittent fasting. *Eat Weight Disord* 2022;27:3109-17.
23. Crowther JM. Understanding effects of topical ingredients on electrical measurement of skin hydration. *Int J Cosmet Sci* 2016;38:589-8.
24. Dall’Oglio F, Nasca MR, Fiorentini F, Micali G. Diet and acne: Review of the evidence from 2009 to 2020. *Int J Dermatol* 2021;60:672-85.
25. Galimberti F, Mesinkovska NA. Skin findings associated with nutritional deficiencies. *Cleve Clin J Med* 2016;83:731-9.
26. Julie Nutrition. Intermittent fasting: Benefits, drawbacks, important considerations. Available from: <https://www.julienutrition.com/intermittent-fasting> [Last accessed on 2024 Aug 02].
27. Bragazzi NL, Trabelsi K, Garbarino S, Ammar A, Chtourou H, Pacifico A, *et al.* Can intermittent, time-restricted circadian fasting modulate cutaneous severity of dermatological disorders? Insights from a multicenter, observational, prospective study. *Dermatol Ther* 2021;34:e14912.
28. Cardinali D, Brown G, Pandi-Perumal SR. Chronotherapy. In: Preedy VR, editor. *Handbook of chronobiology*. 1st ed. United States: Academic Press; 2021. p. 331-48.

How to cite this article: Fathimathul Harshiba H, Muhammed Rafi N. Fasting for clearer skin: Review article investigating the impact of intermittent fasting on dermatological conditions. *CosmoDerma*. 2024;4:124. doi: 10.25259/CSDM_129_2024