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## A case of sunburn treated by homoeopathic constitutional medicine natrum carbonicum: An individuality approach

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### Abstract

Sunburn is an acute inflammatory condition of the skin, primarily caused by excessive exposure to ultraviolet radiation, particularly UV-B. It presents with erythema, pain, tenderness, and, in severe cases, vesiculation and systemic symptoms. Conventional management focuses on symptomatic relief, while homeopathy provides an individualized, holistic approach. This case report discusses a 26-year-old female with acute sunburn on the left palm, presenting with erythema, burning pain, and prostration after sun exposure. Based on a detailed case history, mental generals, and physical modalities, Natrum carb 200 was prescribed, followed by placebo. The patient reported significant improvement in redness and burning within days, with complete recovery over the follow-up period. This case highlights the potential role of individualized homeopathic prescriptions in managing acute sunburn and reducing the need for conventional therapies. Further clinical studies are required to validate the broader applicability of homeopathy in such conditions.

**Keywords:** Sunburn, ultraviolet radiation, natrum carbonicum

### Introduction

Painful skin condition is an inflammatory response of skin from over exposure to ultraviolet radiation predominantly to UV-B. Generally individual ability to tolerate sunlight is inversely proportional to that individual degree of melanin pigmentation <sup>[1]</sup>. Major component of photobiologic action spectrum that capable of affecting human skin include UV waves (200-400nm Wavelength) & visible waves (400-700nm), UV arbitrarily divided into UV-C (200-290), UV-B (290-320nm), UV-A (320-400nm). UV-B most efficient in producing sunburn in human skin thus known as Sunburn Spectrum <sup>[2]</sup>. National Survey in 2005 in U.S. showed that 34.4% of U.S. adult were sunburned in past year, Prevalence in india 65.7% of surveyed individual reported Sunburn experience in previous year, significantly higher than rate reported in USA <sup>[3, 4]</sup>. Clinical features may range from mild asymptomatic redness to on intense erythema, accompanied by tenderness, pain, edema & vesiculation, chronic effect of sun exposure can lead to wrinkling blotchiness & telangiectasia as well as roughened irregular, leathery appearance & non-melanoma skin cancer <sup>[5]</sup>.

This case study examines the possible efficacy of customized homeopathic therapy in treating a sunburn that was healed within a certain time frame without the need for traditional therapeutic intervention. Traditional treatment involves treating a burn of the first or second degree. One mild, individualized treatment that may help sunburn recover is homeopathy.

### Risk factor <sup>[1]</sup>

1. Fair Skin
2. Prolonged sun exposure
3. Male Sex
4. Residence at latitudes relatively close to equator.
5. Blond / Blue eyed individual

### Etiology

1. **Acton Spectrum UVB:** Major Component of photobiologic action spectrum that are capable of affecting are human skin include Ultraviolet radiation of Wavelength

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(200-400nm) and visible wave (400-700nm) UV-B most efficient in producing sunburn in human Skin <sup>[2]</sup>.

2. Chromophore are endogenous or exogenous chemical component that can absorb physical energy <sup>[1]</sup>.

**Table 1:** UVB radiation and chromophores are key factors in the etiology of photobiologic skin reactions.

Endogenous	Exogenous
• Normal component of skin	• Synthesized elsewhere in body and circulate in blood stream & diffuse in skin
• Nucleic acid	
• Protein	
• Lipids	
• 7 dehydrocholesterol	• Porphyrins

This energy absorption result in generation of ROS (Ractive oxygen species) that can mediate structural damage to skin.

3. **Skin type and Sun Burns sensitivity** <sup>[1]</sup>: Fitzpatrick Classification - Based on epideemal melanin unit, skin burn inversely proportional to melanin pigmentation.

**Table 2:** The data describes the Fitzpatrick classification of skin types, showing the inverse relationship between melanin pigmentation and sunburn sensitivity.

Type	Description
<b>I</b>	Always burn, never tan
<b>II</b>	Always burn, sometimes tan
<b>III</b>	Sometimes burn, sometimes tan
<b>IV</b>	Sometimes burn, always tan
<b>V</b>	Never burn, sometimes tan
<b>VI</b>	Never burn, always tan

### Pathophysiology

- Inflammatory response induced by UVR result from release of cytokine along with growth factor and generation of ROS further more UV-induced activation of nuclear factor  $\alpha\beta$  - dependent gene transcription can augment release of several pro-inflammatory cytokine and vasoactive mediators <sup>[1, 7]</sup>.
- These cytokine and mediator accumulate locally in Sunburned skin, provide chemotactic factor that attract neutrophil, macrophage and T-lymphocyte which promote inflammatory response.
- UVR also stimulate iinfiltration of inflammatory cell through induced expression of adhesion molecule such as E - selectin and intercellular adhesion molecule 1 on endothelial cell & keratinocytes.
- UVR also active phospholipase A2 resulting in increase in eicosanoids such as prostaglandin E2 potent inducer of sunburn erythema <sup>[1, 8]</sup>.
- Keratinocytes Langerhans cell absorb UV-B and undergoes structural change in DNA (Pyrimidine bases thymine and cytosine) including formation of Cyclobutane dimers and 6, 4 photo product those changes seen in Basal and Squamous cell carcinoma <sup>[1, 9]</sup>.

### Clinical features <sup>[5]</sup>

1. Erythema (Due to vasodilation of dermal blood Vessel) <sup>[1]</sup> lag time usually 4-12hr between skin exposure to sunlight and development of visible redness, maximum intensity within 24hr, it declines over next 3 to 5 days <sup>[5]</sup>.
2. Tenderness

3. Pain
4. Vesiculation
5. Necrosis and sloughing of skin (next 24-48hr)
6. Hyperpigmentation
7. Systemic sign and symptom - fever, Prostration Nausea, chills and delirium may accompany severe Sunburn.
8. Chronic repeated sun exposure can result in BCC's and SCC's.

### Diagnosis <sup>[5]</sup>

1. History of exposure to sunlight and. clinical features.
2. Histopathological examination →
  - a) Sunburn cell that are altered epidermal cell characterized by homogenous eosinophilic cytoplasm and pyknotic nuclei.
  - b) Moderate vascular dilation.
  - c) Mild perivascular mononuclear and polymorpho-nuclear infiltrate.

### Prevention

- Natural photoprotection is provided by structural protein in epidermis particularly keratin & Melanin, individual of darker complexion (Skin type IV - VI) are at decreased risk for development of acute sunburn and cutaneous malignancy <sup>[1]</sup>.
- **Clothing:** Sun protective fabrics, irrespective of colour, Wide brimmed hats, long sleeves and trousers all reduce direct exposure <sup>[1]</sup>.
- Sunscreens are considered over counter drug and monograph from U.S Food and drug administration (FDA) <sup>[1]</sup>.

### Homeopathy and Sunburn

- Homeopathy offers a holistic and individualized approach in treatment of nburn, emphasizing not only local symptoms but also the patient's overall constitution, mental state, and general tendencies. Remedies are selected based on a detailed case history and totality of symptoms aiming to stimulate the body's innate healing mechanism.
- **Safety and Efficacy:** Homeopathic remedies are highly diluted and potentized, they generally safe, well-tolerated, and with minimal risk of side effects. The individualized prescription, based on the law of similar, aims to address both physical manifestations and underlying patient susceptibility.

### Case

- A 26yr old femae patient visited outpatient department (OPD) presented with erythema in left palm accompanied by severe pain and burning, severe prostration from 12 hours after sun exposure symptom are alleviated by cold application locally and worsened by sun exposure.
- **History of Present Complaint**
- Patient was apparently well 1 day back. He had started complaining of erythema on left palm prostration, and pain and burning in affected part after sun exposure. Allopathic treatment showed no significant improvement.
- The patient also reported increased burning and pain in affected area during sun, excessive summer heat. He

had strong aversion fear milk diarrhea from it, was a hot patient thermally.

- **Past & Family History:** History of Typhoid in 2010. Family history includes Father with Type 2 Diabetes Mellitus (T2DM).

**Table 3:** The patient presented with sun-induced erythema and burning on the left palm, aggravated by heat, with a history of typhoid and familial diabetes.

• Physical General	
• Taste	▪ Bitter
• Dislike	▪ Milk
• Sleep	▪ Wakes early in morning
• Dream	▪ Water
• Thermal	▪ Hot
General Examination	
• Pallor	▪ Present
• Icterus	▪ Absent
• Lymph nodes	▪ Absent
• Blood Pressure	▪ 100/70
• Pulse	▪ 90 b/m
• Temperature	▪ Afebrile

#### • Particular

**Skin:** Skin discolouration red, spots and Skin eruption burning suggest a skin condition with redness, spots, and a burning sensation.

#### • Mental General

The patient is very introverted. She get difficulty to express her feelings. She is financially poor that's why feel that her friends separated her from there group and she is alone.

#### • Local Examination

On inspection "Multiple erythematous macules in left palm with severe burning and tenderness.

#### • Totality of Symptom

A list of nine specific symptoms is identified for a patient, including:h

- Forsaken feeling
- Delusion: division between himself and others.
- Starting at slightest noise
- Introverted
- Disagree milk
- Dreams of water
- Reddish discoloration on palms
- Burning in eruption
- Sunburn

**Miasmatic:** The miasmatic evaluation for presenting symptoms showed the predominance of Psora miasm. Considering the above totality complete repertory was preferred and software synergy homeopathic software is used. The repertorization chart is given in.

#### Repertorial Analysis <sup>[6]</sup>

	Nat-c.	Merc.	Nat-n.	Sil.	Puls.	Kali-c.	Ars.	Con.	Lyc.	Sulph.	Mag-c.	Sep.	Carc.
<b>Total</b>	25	25	25	25	24	22	21	21	21	21	19	19	16
<b>Rubrics</b>	9	8	8	8	8	8	8	8	8	8	8	8	8
<b>Kingdom</b>	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
<b>Rajan's miasms</b>	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
CR23 - Mind; delusions, imaginations; division between oneself and others(17)													
CR23 - Mind; forsaken feeling(361)													
CR23 - Mind; reserved(209)													
CR23 - Mind; starting, startled; noise, from(124)													
CR23 - Dreams; water(267)													
CR23 - Skin; redness(939)													
CR23 - Skin; eruptions; burning(290)													
CR23 - Generalities; sun; agg.(424)													
CR23 - Generalities; food and drinks; milk, milk products; aversion(120)													

Based on the repertorial analysis, Natrum-carb has covered the maximum (9 out of 25) followed were mercurius, natrum nitricum, silicea and pulsatilla.

Natrum-carb is also indicated as the patient hot in thermal reaction and is used in patient in which ailments from over sun exposure.

#### Selection of remedy with justification

After analysing the totality, Natrum - carb 200C was selected as the most appropriate constitutional remedy, the decision was reinforced by materia medica references where natrum carb aligns with patient psychological profile (Introverted forsaken) thermal modality (hot) and sunburn. A single dose of Natrum carb 200 was prescribed followed by placebo twice daily for 5 day in accordance with homeopathic principle of minimum dose and individualized prescription.



#### Perscription

Natrum carb 200 was prescribed followed by placebo BD for 5 days.

#### General Management

- Avoid exposure to direct sunlight and artificial sources

of UVR [7].

- Use of sunscreen cream.
- Clothing - Sun protective fabrics extra-long sleeves, trousers and Wide brimmed hat.

**Table 3:** Natrum carb 200 was prescribed with general sun protection measures, leading to complete relief of redness and burning within a week.

Date	Symptoms	Follow-up
28/06/2025	Improved patient Redness and burning after taking medicine	Rx Placebo BD For 5 Days
01/07/2025	No new complain complete disappearance of redness and burning	Rx Placebo BD For 10 Days

## Discussion

This instance demonstrates how customized homeopathic prescriptions may be used to treat severe sunburn. While homeopathy takes the patient's constitutional and psychological characteristics into account when choosing a remedy, conventional therapy often concentrates on symptomatic alleviation. In this instance, the good reaction to Natrum carb demonstrates how well it fits the patient's medical problems, mental state, and thermal modality. In addition to treating the acute inflammatory symptoms, the holistic approach promoted the patient's overall health. Although the results are promising, more thorough clinical research with bigger sample sizes is required to confirm homeopathy's effectiveness in treating sunburn.

## Conclusion

This instance shows how individualized homeopathic medicine with Natrum carb can minimize the need for conventional therapies while promoting an efficient recovery from severe sunburn. It emphasizes how effective patient-centered, holistic therapy can be in treating severe skin disorders.

## Conflict of Interest

Not available

## Financial Support

Not available

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