



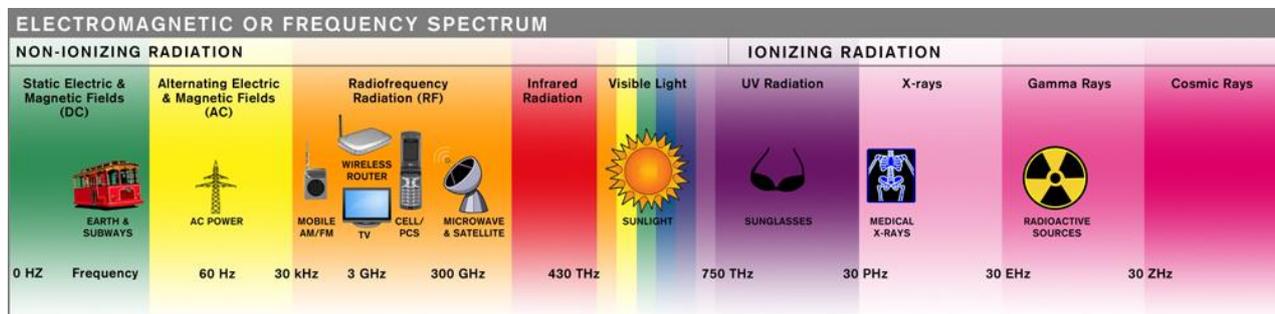
## Cancer Association of South Africa (CANSA)

### Fact Sheet on Actinic Cheilitis

#### Introduction

According to the SCC Scottish Sensory Centre, University of Edinburgh, UV radiation is described as follows: “In the electromagnetic spectrum there is an area of visible light. UV radiation has wavelengths shorter than visible light. We can't see it, although birds and insects can. The wavelength of UV light varies from 10-400 nm. Within this UV spectrum there are three different sorts of UV light. The first section, called UVA, has wavelengths of 320-400 nm. The second, UVB, has wavelengths of 290-320 nm. The third, UVC, has wavelengths of 10-290 nm.”

The diagram below shows ultraviolet (UV) radiation as part of the electromagnetic spectrum. The wavelength of ultraviolet radiation is between 10nm and 400nm which makes it shorter than the wavelengths of visible light (400nm to 700nm) and longer than X-rays.



[Picture Credit: EMF & RF Solutions]

#### Sources and Uses of Ultraviolet Radiation

Although there are manmade sources of ultraviolet (UV) radiation like arc welding, mercury vapour lamps and UV lamps, the sun is the major source of ultraviolet radiation.

Uses and benefits of ultraviolet radiation include:

- Phototherapy (also called light therapy or heliotherapy)
- Disinfection and sterilisation
- Triggers Vitamin D production in human skin
- Tanning

## Harmful Effects of Ultraviolet Radiation in Humans

Overexposure to ultraviolet radiation may cause:

- Sunburn
- Skin cancer, especially squamous cell carcinoma
- Premature ageing of skin
- Suppression of the immune system
- Eye damage (macular degeneration, damage to the cornea of the eye, and cataract formation)

### Actinic Cheilitis

Actinic Cheilitis is a pre-malignant condition which results of excessive exposure to the UV rays of the sun. It is especially the lower lip, more so than surrounding skin that is affected. It is mostly seen along the line that separates the lips from the skin of the face. Individuals with albinism are often affected by Actinic Cheilitis.



Other names for Actinic Cheilitis include actinic cheilosis, actinic keratosis of the lip, solar cheilosis, sailor's lip and farmer's lip. It presents mainly in adults with fair skin who spend a lot of time in the sun. It presents as a diffuse or patchy dryness on the lower lip. If neglected it may cause squamous cell carcinoma *in situ*.

[Picture Credit: Actinic Cheilitis]

Other parts of the body that may be affected include:

- Other parts of the face
- The hands
- The ear lobes
- The scalp (especially if there is thinning of the hair)

**Rodríguez-Blanco, I., Flórez, Á., Paredes-Suárez, C., Rodríguez-Lojo, R., González-Vilas, D., Ramírez-Santos, A., Paradela, S., Suárez Conde, I. & Pereiro-Ferreirós, M. 2018.**

“Actinic cheilitis is thought to be a premalignant lesion or a superficial squamous cell carcinoma. The prevalence of actinic cheilitis in Europe is unknown. The aim of this study was to determine the prevalence of actinic cheilitis in the Galicia region (north-west Spain). Secondary objectives were the description of risk factors of actinic cheilitis. A cross-sectional multicentre study in patients  $\geq 45$  years of age was performed in 8 dermatology departments in Galicia region during a 1-year period. The prevalence of actinic cheilitis was 31.3%. Significant and independent risk factors of actinic cheilitis after multivariate analysis were age  $\geq 60$  years, Fitzpatrick skin phototype II, outdoor working for more than 25 years, and previous history of non-melanoma skin cancer. This is the first cross-sectional multicentre study of the prevalence of actinic cheilitis in Europe. Actinic cheilitis was present in almost one-third of the screened patients. Lip examination should be performed in all patients with chronic actinic damage.”

### Incidence of Actinic Cheilitis in South Africa

The National Cancer Registry (2014) does not provide any information regarding the incidence of Actinic Cheilitis in South Africa as it is a pre-malignant condition.

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March 2019

### Prevention of Actinic Cheilitis

The best protection against developing Actinic Cheilitis includes:

- Protection of the face against sun exposure by wearing a broad rim hat
- Regular application of an effective sunscreen (SPF 30)
- Avoid being outside when the sun is at its hottest

### Assessment and Treatment of Actinic Cheilitis

When skin changes are noticed on the lower lip or other areas of the body, one should visit a dermatologist for assessment and treatment. This may involve:

- Clinical assessment
- Biopsy
- Electrosurgery
- Cryotherapy
- Application of medication to the affected area.

**Mello, F.W., Melo, G., Modolo, F. & Rivero, E.R.** 2019.

**BACKGROUND:** To investigate the prevalence of malignant and potentially malignant lesions of the lip in an oral pathology service and to compare these data with a literature review.

**MATERIAL AND METHODS:** A total of 3173 biopsy reports and histopathological records were analyzed. Cases with a histological diagnosis of actinic cheilitis (AC) with or without epithelial dysplasia, in situ carcinoma, or lip squamous cell carcinoma (LSCC) were included. A comprehensive literature review was conducted to investigate the prevalence of AC and/or LSCC.

**RESULTS:** 124 cases (3.91%) were included, 75 (60.5%) had some degree of epithelial dysplasia and 31 (25.0%) were LSCC. Clinically, most of the lesions were diagnosed as AC (50.8%); however, eight cases clinically reported as AC were histologically diagnosed as LSCC. Regarding clinical characteristics, most individuals were fair-skinned male, with mean age of  $54.3 \pm 12.3$  years, and with a history of long-term solar exposure. Furthermore, 18 articles were selected from the literature, showing that the lower lip was predominantly affected and that most individuals were males, fair-skinned, and older than 40 years.

**CONCLUSIONS:** Since most of the cases diagnosed clinically as AC presented some degree of epithelial dysplasia, it is important to emphasize the value of biopsy and the histological evaluation of this lesion.

**Levi, A., Hodak, E., Enk, C.D., Snast, I., Slodownik, D. & Lapidoth, M.** 2019.

**BACKGROUND:** Actinic cheilitis (AC) is a common, chronic premalignant condition resulting from protracted sun exposure affecting the vermilion border of the lower lip. Treatment of AC aims at terminating the progression to squamous cell carcinoma by obliterating the primary lesion, and includes ablative methods; nonablative modalities such as cryotherapy, electrodesiccation, chemical peeling, topical imiquimod and 5-fluorouracil; and photodynamic therapy (PDT). Daylight-activated PDT, in which natural daylight serves as the light source, showed promising results in the treatment of actinic keratoses with substantially less pain than conventional PDT.

**PURPOSE:** To determine the safety and efficacy of daylight PDT in a series of patients with AC.

**METHODS:** Eleven patients with AC were treated with daylight PDT. All patients underwent repeated treatment sessions until clinical and histological remission were achieved.

**RESULTS:** Cure rate was 91% (10 of 11 patients, three females/eight males; mean age  $59.2 \pm 14.4$  years). Mean number of treatments to attain cure was 2.7. Patients experienced mild erythema and minimal to no pain during treatment.

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**CONCLUSIONS:** Daylight PDT is a promising modality for the treatment of AC, with impressive cosmetic results and few side effects.

**Chaves, Y.N., Torezan, L.A., Lourenço, S.V. & Neto, C.F.** 2017.

**INTRODUCTION:** Actinic cheilitis (AC) is a lip intraepithelial neoplasia, whose cells present alterations similar to those presented by invasive squamous cell carcinomas (SCCs).

**OBJECTIVE:** To conduct clinical and laboratory evaluation by histopathology and immunohistochemistry of the efficacy of actinic cheilitis treatment using photodynamic therapy (PDT) with methyl aminolevulinate (MAL) and noncoherent red light.

**MATERIALS AND METHODS:** Patients with actinic cheilitis detected by histopathological examination were submitted to two sessions of photodynamic therapy with a two-week interval between them. They were examined immediately after the sessions, four, six, and twelve weeks after beginning treatment when a new biopsy was carried out. Clinical histopathological and immunohistochemical parameters were evaluated before and after treatment.

**RESULTS:** Of the 23 patients who underwent biopsy, 16 completed two photodynamic therapy sessions and the material of one patient was insufficient for immunohistochemistry. Complete clinical response was achieved in 62.5% (10 of 16 patients) and 37.5% still remained with clinical evidence of AC. In spite of this, no case of cure by histopathological analysis was found. There was no significant statistical change among the values of Ki-67, survivin, and p53 observed before and after treatment.

**CONCLUSION:** Photodynamic therapy, as carried out in this trial, was not an efficacious therapeutic option for treating patients with actinic cheilitis included in this sample.

### Medical Disclaimer

This Fact Sheet is intended to provide general information only and, as such, should not be considered as a substitute for advice, medically or otherwise, covering any specific situation. Users should seek appropriate advice before taking or refraining from taking any action in reliance on any information contained in this Fact Sheet. So far as permissible by law, the Cancer Association of South Africa (CANSA) does not accept any liability to any person (or his/her dependants/estate/heirs) relating to the use of any information contained in this Fact Sheet.

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### Sources and References Consulted and/or Utilised

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<https://www.patienthelp.org/diseases-conditions/actinic-cheilitis.html>

#### Canadian Centre for Occupational Health and Safety

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#### **DermNet NZ**

<http://www.dermnetnz.org/site-age-specific/solar-cheilitis.html>

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<http://www.emfrf.com/electromagnetic-spectrum-or-frequency-spectrum/>

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#### **Science Learning Hub**

<https://www.sciencelearn.org.nz/resources/1304-positive-and-negative-effects-of-uv>

#### **Scottish Sensory Centre**

<http://www.ssc.education.ed.ac.uk/BSL/physics/ultravioletradd.html>

#### **Study.com**

<http://study.com/academy/lesson/what-is-uv-radiation-definition-types-effects.html>

#### **The Dermatologist**

<http://www.the-dermatologist.com/content/actinic-cheilitis-treatment-ablative-laser-vermilionectomy>