

# The Impact of COVID-19 Pandemic and Associated Restrictions on Skin Cancer Diagnosis and Treatment in the Western World.

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## KEYWORDS

Skin Cancer, COVID-19, Cancer diagnosis

The COVID-19 pandemic has had a significant impact on healthcare services worldwide. Outpatient dermatology services have experienced a substantial decline in referrals and consultations. (1-3) Prior to the pandemic, dermatology referrals for skin cancer had been increasing for several years. However, since the start of the COVID-19 pandemic, there has been a decrease in the diagnosis and treatment of skin cancer in Canada

and in other western countries. (4) Although the information about the number of dermatology referrals, skin biopsies and skin cancer diagnoses in Canada is limited (4), statistics from the United Kingdom and the United States are available. Early diagnosis plays a critical role in improving overall survival in patients diagnosed with skin cancer. Data obtained from the Cancer Tracking Service at Salford Hospital in the United Kingdom noted

as much as a 50% decrease in urgent skin cancer referrals between March and April 2020, when compared to the previous year; this expected to result in a similar reduction in skin cancer diagnoses. (1,5) The decrease in referrals was also observed for several other types of malignancies such as urological, gynecological and colorectal. (1) The reduction in referrals for suspected skin cancer is of great concern to the general population as it presumably means that more patients will present later on with advanced stages requiring more morbid surgeries and overall worse prognoses. The reduction in dermatology consultations and skin biopsies is likely related to several factors, as described by Ibrahim et al in 2021. (2) Fear and anxiety related to contracting COVID-19 dissuade many patients from presenting for in-person assessments. Patients may avoid using telemedicine if they have a skin lesion located on the genitalia, perineum or breast. Elderly individuals at higher risk of developing skin cancer, may have difficulty navigating virtual systems. (2) Moreover, the need for specialized equipment, reliable high-speed internet connection and computer knowledge may represent significant socioeconomic barriers for certain patients. (2) Additional factors are likely limiting access and effectiveness of tele-dermatology for various populations; however, more qualitative data is needed to address these elements. There has been a significant increase in telemedicine use among healthcare providers since the start of the COVID-19 pandemic. Although telemedicine has limitations, it can help with the timely diagnosis of skin cancers, when presenting to a clinic for an in-person evaluation is not possible. Dermatologists working in a university setting or a public-sector were 20% more likely to use telemedicine than private practitioners. (3) However, dermatologists that have been in practice for more than thirty years were less likely to use telemedicine. (2) Despite the widespread use of telemedicine, the amount of skin cancer referrals and biopsies have not recovered to quantities seen prior to the pandemic in the United Kingdom or the United States. (1-3, 5) The specific long-term effect of this decline remains unknown at the moment, but an increase in mortality and morbidity due to skin cancers is anticipated. More research is

needed to study the effect of COVID-19 on skin cancer outcomes in Canada.

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