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## The association between COVID-19 lockdowns and melanoma diagnosis and thickness: A multicenter retrospective study from Europe

*To the Editor:* After the COVID-19 pandemic, a drop was observed in all cancer screening visits, including those for melanoma because even with the growth of telemedicine, remote melanoma screenings are challenging. The purpose of this study was to evaluate how the COVID-19 pandemic restrictions affected melanoma diagnosis. In this multicenter, retrospective, cross-sectional study, we reviewed histopathologic reports performed 1 year before and 1 year after the beginning of lockdowns in 6 European referral centers and compared the number of and histologic features of melanomas diagnosed in each period. The data collected included patients' sex and age, melanoma anatomical location, date of diagnosis, invasion thickness, presence of ulceration, sentinel lymph node status, and stage according to the American Joint Committee on Cancer 8th TNM.[1] Differences between groups were tested using nonparametric tests; $\chi^2$ test for categorical variables and Wald-Wolfowitz test for continuous variables. All tests were 2-sided, and statistical significance was set at $P < .05$.

In the prelockdown period, 2311 melanomas were diagnosed, of which 1425 (61.7%) were invasive with a mean invasion thickness of 1.7 mm (95% CI, 1.58-1.85; $P < .001$). In the postlockdown period, 1722 melanomas were diagnosed, of which 1065 (60.1%) were invasive, with a mean invasion thickness of 2.0 mm (95% CI, 1.86-2.21; $P < .001$). In the postlockdown period, the total number of melanomas that were diagnosed decreased by 25.5% and the mean invasion thickness increased by 0.3 mm ($P < .001$). In addition, there was a significant decrease in in situ and stage I melanomas (−3.8%; 95% CI: −6.4% to −1.1%; $P = .004$) and a significant increase in stage II melanomas (+2.5%; 95% CI, 4.1%-4.6%; $P = .016$). A significant decrease was observed in the number of diagnoses performed monthly (Fig 1) during the first few months of lockdown, which is similar to the finding reported in the studies published by Gisondi et al[2] and Javor et al[3] in Italy. An even higher reduction in the number of diagnoses performed monthly was observed in the studies by Koch et al[4] and Lallas et al,[5] in which the decrease in melanoma diagnosis was 31.2% and 36.4%, respectively.

When analyzing the median invasion thickness in the prelockdown period, trends where highly stable—around 0.7 mm. However, in the postlockdown

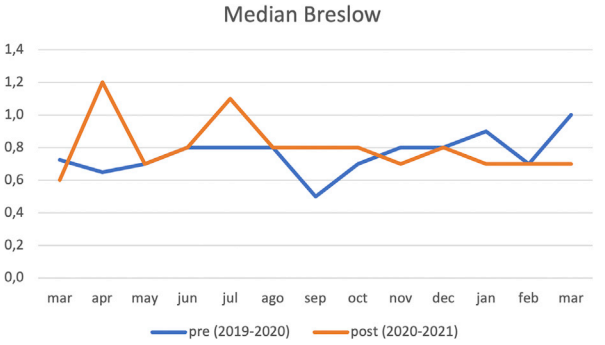


**Fig 1.** Melanoma diagnosis per month in the prelockdown and postlockdown cohorts.

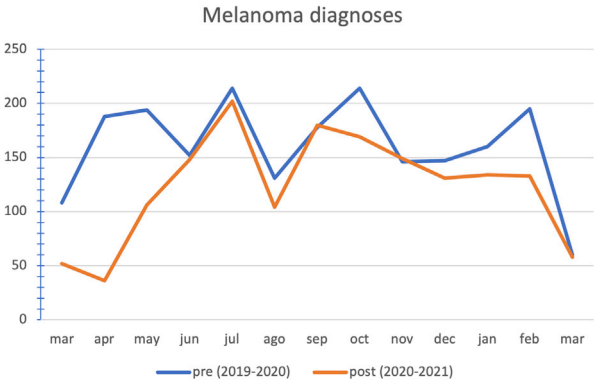


**Fig 2.** Median invasion thickness of melanomas diagnosed per month in the prelockdown and postlockdown cohorts.

period, this number increased in the first months as soon as the restrictions were relieved, meaning that melanomas diagnosed in that period were of a higher thickness (Fig 2). In situ melanomas, concomitantly, were less diagnosed in that period because those lesions are usually observed during routine visits and dermatoscopic controls, which were considerably diminished in that time.

The main limitations of this study are that cause-effect relationships are difficult to assess from retrospective observational data and that the impact of confounding variables is unknown. We also did not include follow-up data regarding disease progression and prognosis, and because only 5 Europeans countries were included, it may not reflect the actual trends of different European countries.

In conclusion, in our study, which was performed for a longer period than the time period of previous reports, the total number of new melanomas seen in the postlockdown period was 25.5% lower than that seen in the prelockdown period, with a slight but significant increase in the mean invasion thickness and the number of stage II melanomas.

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**Conflicts of interest**

None disclosed.

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## Risk of herpes zoster reactivation after messenger RNA COVID-19 vaccination: A cohort study

*To the Editor:* Recent case series and media coverage suggest an association between receiving the messenger RNA (mRNA) COVID-19 vaccine and reactivation of the varicella zoster virus (VZV).[1-3] Fear of a potential adverse effect will drive vaccine refusal and subsequent preventable disease and death. The purpose of the present investigation is to evaluate the relationship between mRNA COVID-19 vaccination and VZV reactivation.

We performed a retrospective cohort study using the TriNetX Analytics Network (TriNetX, LLC), a federated health research network that aggregates health records from 63 health care organizations comprising 70 million patients. We included patients aged ≥18 years who received the mRNA COVID-19 vaccine either as the first or the second dose between December 15, 2020 and July 15, 2021 (Supplemental Material, available via Mendeley at https://data.mendeley.com//datasets/trkg3zfr5f/1). Herpes zoster reactivation (code B02; International Classification of Diseases, Tenth Edition) related to mRNA COVID-19 vaccine administration was defined as occurring within 28 days.[4]

A control population was established, comprising persons in the database diagnosed with acne, viral wart, melanocytic nevi, dry skin, lipoma, skin cysts, or seborrheic keratosis and who had no history of COVID-19 vaccination (Supplemental Material). Because persons may have received a COVID-19 vaccination at a location outside of the health care organizations participating in the database, we split our control population into 2 cohorts. The first (historical) control cohort comprised individuals