

1 **Changing trends of ocular trauma in the time of COVID-19 pandemic**

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16 Dear Editor,

17 To reduce the spread of the novel coronavirus (2019-nCoV), countries have promoted a range of
18 unprecedented public health responses. These measures aim at reducing the final size of the epidemic
19 as well as its peak in order to decrease the acute pressure on the health-care system.¹ In Italy, the
20 government ordered people to stay home, restricting movements with the exception of work, urgent
21 matters and health reasons. Furthermore, all commercial and productive activities, except those
22 providing essential services, were obligated to remain closed.²

23 Ocular trauma represents a serious public health problem and leading cause of visual impairment.^{3,4}
24 The COVID-19 social distancing measures might have a significant impact on the risk of ocular
25 trauma. In this study, we retrospectively reviewed the charts of all patients presenting to an Italian
26 ophthalmological emergency department (the Ophthalmology Unit of the S.Orsola-Malpighi
27 University Hospital in Bologna) to identify all eye injuries. Data were analysed from 10th March
28 2020 (i.e. the day in which the quarantine measures were applied in our city) to 10th April 2020, and
29 confronted with those of the same period of the previous year (from 10th March 2019 to 10th April
30 2019).

31 In the 2019 study period, there were 354 eye injuries (15.6% of all patients presenting to the
32 emergency department). In the 2020 study period, eye injuries decreased to 112 (19.9% of all
33 patients). The characteristics of eye injuries in the two study periods are reported in Table 1. During
34 quarantine, the proportion of children and adolescents with eye injuries decreased (from 14.7% to
35 8.0%, Figure 1A), while the proportion of males increased (from 66.7% to 75.0%, Figure 1B).
36 Regarding the mechanisms of injury, the percentage of falls and sport injuries had the highest
37 decrease (respectively, from 6.5% to 0.9% and from 5.9% to 2.7%), while injuries during home
38 activities and injuries with plants had the highest increase (respectively, from 12.4% to 17.0% and
39 from 8.5% to 10.7%, Figure 1C). The percentage of minor injuries with low risk of vision loss

40 increased (from 93.2% to 94.6%), while major injuries requiring monitoring decreased (from 6.8%
41 to 5.4%, Figure 1D).

42 There was a striking 68.4% decrease in the number of eye injuries seen in our Unit during the last
43 month. Behavioural changes during the quarantine could be associated with lower risk of trauma. The
44 decreases of sport injuries and of injuries in children during school closure seem to support this
45 hypothesis. However, the drop of patients seeking emergency care affected all injuries, including
46 serious ones potentially associated with vision loss. We believe that some patients may intentionally
47 avoid urgent care rather than risking coronavirus exposure at hospitals. Anecdotal reports suggest
48 that this is also happening for life-threatening medical emergencies such as myocardial infarction and
49 stroke.^{5,6} Since ocular trauma is a major cause of vision loss, the importance of not delaying or
50 avoiding treatment should be stressed to all patients to prevent ocular morbidities.

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73 **Figure legends**

74 **Figure 1:** Number of eye injuries in the 2019 study period (from 10th March 2019 to 10th April,
75 2019) and 2020 study period (from 10th March 2020 to 10th April 2020) according to categories of
76 age (**A**), sex (**B**), mechanism of trauma (**C**) and minor/major injuries (**D**).

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78 **Table legends**

79 **Table 1.** Characteristics of eye injuries in the 2019 study period (from 10th March 2019 to 10th April,
80 2019) and 2020 study period (from 10th March 2020 to 10th April 2020).