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

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

2 Marco Pellegrini, MD,<sup>1</sup> Matilde Roda, MD,<sup>1</sup> Natalie Di Geronimo, MD,<sup>1</sup> Enrico Lupardi, MD<sup>1</sup>,  
3 Giuseppe Giannaccare, PhD,<sup>2</sup> Costantino Schiavi, MD.<sup>1</sup>

4 <sup>1</sup> *Ophthalmology Unit, S.Orsola-Malpighi University Hospital, University of Bologna, Bologna, Italy.*

5 <sup>2</sup> *Department of Ophthalmology, University of “Magna Graecia”, Catanzaro, Italy.*

6

7 **Corresponding Author:**

8 *Marco Pellegrini, MD*

9 *Ophthalmology Unit, S.Orsola-Malpighi University Hospital, University of Bologna, Italy*

10 *Address: Via Palagi 9, 40138, Bologna, Italy*

11 *Tel: +39 051 2142845*

12 *Fax: +39 051 342821*

13 *E-mail: [marco.pellegrini@hotmail.it](mailto:marco.pellegrini@hotmail.it)*

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15 **Conflict of Interest:** The authors declare no conflict of interest.

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.<sup>1</sup> 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.<sup>2</sup>

23 Ocular trauma represents a serious public health problem and leading cause of visual impairment.<sup>3,4</sup>  
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 10<sup>th</sup> 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.<sup>5,6</sup> 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.

51

52 **Conflict of Interest:** The authors declare no conflict of interest.

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54 **References**

- 55 1. Wilder-Smith A, Chiew CJ, Lee VJ. Can we contain the COVID-19 outbreak with the same  
56 measures as for SARS?. *Lancet Infect Dis* 2020; e-pub ahead of print 5 March 2020;  
57 doi:10.1016/S1473-3099(20)30129-8
- 58 2. Italian Government, decreto del presidente del Consiglio dei ministri (DPCM) March 11,  
59 2020. [http://www.governo.it/it/articolo/coronavirus-conte-firma-il-dpcm-11-marzo-](http://www.governo.it/it/articolo/coronavirus-conte-firma-il-dpcm-11-marzo-2020/14299)  
60 [2020/14299](http://www.governo.it/it/articolo/coronavirus-conte-firma-il-dpcm-11-marzo-2020/14299).
- 61 3. Matsa E, Shi J, Wheeler KK, McCarthy T, McGregor ML, Leonard JC. Trends in US  
62 Emergency Department Visits for Pediatric Acute Ocular Injury. *JAMA Ophthalmol* 2018;  
63 **136**: 895-903.
- 64 4. Négrel AD, Thylefors B. The global impact of eye injuries. *Ophthalmic Epidemiol* 1998; **5**:  
65 143-169.
- 66 5. Krumholz HM. Where Have All the Heart Attacks Gone? *New York Times*; published  
67 online 6 April 2020. [https://www.nytimes.com/2020/04/06/well/live/coronavirus-doctors-](https://www.nytimes.com/2020/04/06/well/live/coronavirus-doctors-hospitals-emergency-care-heart-attack-stroke.html)  
68 [hospitals-emergency-care-heart-attack-stroke.html](https://www.nytimes.com/2020/04/06/well/live/coronavirus-doctors-hospitals-emergency-care-heart-attack-stroke.html)
- 69 6. American Heart Association. Health emergency? Don't hesitate to get help. Published online  
70 30 March 2020. [https://www.heart.org/en/news/2020/03/30/health-emergency-dont-hesitate-](https://www.heart.org/en/news/2020/03/30/health-emergency-dont-hesitate-to-get-help)  
71 [to-get-help](https://www.heart.org/en/news/2020/03/30/health-emergency-dont-hesitate-to-get-help).

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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**).

77

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).