COVID-19 OCULAR ASSOCIATIONS IN THE SCIENTIFIC LITERATURE:

SYNOPSIS 25

The COVID-19 pandemic began in December and has affected people in nearly every country in the world. We provide a summary of ocular-related associations with COVID-19 in the literature, and we plan to update this as we become aware of new manuscripts. Thus far, it appears that approximately 1-5% of COVID-19 patients experience conjunctivitis and very few COVID-19 patients exhibit virus in their tears.


- Experimental modeling
- Aerosols = smaller light particles that remain suspended in the air because of slow settling velocity
- Large droplets = heavier particles that fall rapidly after a downward trajectory
- Setup = mannequin face at oculars represented doctor and spray bottle at chin rest represented patient
  - Particle peak velocity of 4 m/s, max horizontal distance of 2.35 m; comparable to coughing or sneezing
- Camera captured 1000 frames/s; repeated three times under each condition
- Condition 1: no slit lamp shield or patient mask
- Condition 2: slit lamp shield
- Condition 3: patient masks
  - Five types of masks: an N95 respirator, three surgical masks with filtration efficiencies from 95 to 99%, and a cloth mask
- Two trained graders counted number of particles within a 31.2 × 19.6 mm area

<table>
<thead>
<tr>
<th></th>
<th># (SD) particles</th>
<th>Qualitative hypersusceptible areas</th>
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</thead>
<tbody>
<tr>
<td>No protection</td>
<td>42.7 ± 34.5</td>
<td>lower half of the mannequin, slit lamp, and table</td>
</tr>
<tr>
<td>Slit lamp shield</td>
<td>12.3 ± 5.7</td>
<td>mannequin’s neck, the shield, the slit lamp, and table</td>
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<tr>
<td>Patient mask</td>
<td>0.0 ± 0.0</td>
<td>inner surface of the masks</td>
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- Conclusion: “Our study showed that all five types of face masks on patients provided the most complete protection against aerosol and droplet transmission.”