

## CORONASYS INNOVATION SHEET 1

### “NEW” ANTIVIRAL FACE MASKS

#### Background

A study established that people touch their faces 23 times per hour on average<sup>1</sup>. Especially people who are not used to wearing masks tend to touch their faces to adjust the masks very often. Furthermore, the coronavirus that causes Covid-19 remains present and infectious on the outer layer of masks for up to 7 days, according to a study published in *The Lancet Microbe*<sup>2</sup>. Several companies<sup>3</sup> have developed “new” forms of antimicrobial face masks that receive quite a lot of media coverage at the moment.

#### Features

Some types of “new” masks are coated with various antiviral and antimicrobial substances (e.g. copper oxide, Triiodide), while others work by destroying the negatively charged microbes on contact with the strongly positively charged surface of the textiles. The manufacturers claim that the “new” masks can render 99% of the Corona Virus suspension on the outside surface of the mask harmless<sup>4</sup>. Studies have confirmed the efficacy of the respective products<sup>5</sup>. The masks are reusable and come at a price range from about 6€ to 45€.

#### Potentials

The masks can help limit transmission by preventing the spread of the virus over the mask surface. They also prevent unpleasant smells of the masks. The “new” masks might therefore be an added value especially for health workers or other essential workers who need to wear the masks for longer time periods.

#### Points to consider

The efficacy under laboratory conditions is undisputed. Still, experts warn against over-expectations and a false sense of security. The “new” masks do not offer 100% protection against infection since other forms of transmission are still far more likely. In addition, it must be noted that only the surface of the masks is largely virus-free but not the other parts of the face that are touched frequently. The products can therefore only be an addition to existing hygiene and social distancing measures in tackling the pandemic<sup>6</sup>.

#### Conclusion

The effect of the “new” masks has been proven but further studies are needed to assess effectiveness and long-term safety of the new products under everyday conditions<sup>7</sup>. Especially for people who must wear the masks for a long time, they might represent an added value. In general, however, existing mask models seem to be sufficient and offer a good price-performance ratio. Various experts consider the everyday masks and medical masks used to date, together with frequent hand washing and compliance with social distancing rules, to be sufficient.

**State of information:** 13/08/2020

**Market launch:** July 2020

**Countries:** Canada, Israel, Switzerland

**Focus area:** Prevention; PPE

**Developers:**

- i3 BioMedical Inc. (Canada)
- Livingguard (Switzerland)
- Argaman Technologies Ltd (Israel)

**Beneficiaries:**

- general public, especially essential (health) workers

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- <sup>1</sup> Kwok, Yen Lee Angela/Gralton, Jan/McLaws, Mary-Louise (2015). Face touching: a frequent habit that has implications for hand hygiene, American journal of infection control (43), 112–114, Online: <https://pubmed.ncbi.nlm.nih.gov/25637115/> (10.08.2020)
  - <sup>2</sup> Chin, Alex W. H. et al. (2020). Stability of SARS-CoV-2 in different environmental conditions, The Lancet Microbe (1), e10, Online: [https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247\(20\)30003-3/fulltext](https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247(20)30003-3/fulltext) (10.08.2020)
  - <sup>3</sup> i3biomedical, Online: <https://i3biomedical.com/> (12.08.2020).  
Argamantech, Online: <https://argamantech.com/> (11.08.2020)  
Livinguard, Online: <http://www.livinguard.com/> (11.08.2020).
  - <sup>4</sup> BR24 (27.07.2020). Neue Corona-Killer-Masken sollen Virus abtöten, Online: <https://www.br.de/nachrichten/wissen/neue-corona-killer-masken-sollen-virus-abtoeten,S5wbz4V> (11.08.2020).
  - <sup>5</sup> Freie Universität Berlin (2020). Innovative textiles for face masks can directly inactivate SARS-CoV-2 as researchers from Freie Universität Berlin and RWTH Aachen University showed. No 096/2020 from Jun 10, 2020, Online: [https://www.fu-berlin.de/en/presse/informationen/fup/2020/fup\\_20\\_096-gesichtsmasken-corona/index.html](https://www.fu-berlin.de/en/presse/informationen/fup/2020/fup_20_096-gesichtsmasken-corona/index.html) (12.08.2020).
  - Kalvapalle, Rahul (2020). U of T tests show Canadian-made mask deactivates 99% of SARS-CoV-2 virus, Online: <https://www.utoronto.ca/news/u-t-tests-show-canadian-made-mask-deactivates-99-sars-cov-2-virus> (11.08.2020).
  - <sup>6</sup> Horvath, Hannah (2020): Best antimicrobial face masks, according to medical experts. <https://www.nbcnews.com/shopping/apparel/best-antimicrobial-face-masks-n1231803> (12.08.2020)  
Klein, Oliver (17.07.2020). Sollen Coronaviren töten -Was taugen die neuen Supermasken?, Online: <https://www.zdf.de/nachrichten/panorama/coronavirus-maske-biomedical-100.html> (11.08.2020).
  - <sup>7</sup> SWR (24.07.2020). Mainzer Virologe Plachter mahnt Studien an. Können neuartige Corona-Masken die Viren abtöten? <https://www.swr.de/swraktuell/rheinland-pfalz/viren-toetende-masken-100.html> (11.08.2020).

### Background on Innovation Sheet Series

As part of a real time evaluation of the SARS CoV 2 pandemic (with focus on epidemiological, medical, economical, societal, technical and cultural developments in Germany and Armenia) the CoronaSys research team, under the leadership of Prof. Dr. Martin Voss, is conducting a continuous monitoring of developments and medical, technical, and social innovations concerning Covid-19.

Multiple national and international media outlets, research platforms and scientific and organizational guidelines, briefs and updates are screened to feed into this outlet. The rationale behind this is to support the projects' network partners in Armenia and Germany with short summaries of key developments and promising innovations that are shaping the global, German and Armenian outbreak response and recovery.

The aim of these short briefs is to give condensed and structured information on selected innovations emerging out of the conducted horizon scanning. This could be mainstream big-ticket items or fringe subjects that are easily overlooked in the global flood of information. Some innovations will be followed through their evolution in time while others may only appear once. While subjectively selected, the briefs are descriptive in nature and leave analysis and critical interpretation to the reader. Network partners in both countries are invited to provide feedback on their interest areas and suggest particularly relevant topics for the CoronaSys Workshop series.

The CoronaSys Innovation Sheet Series is published by the [Academy of the Disaster Research Unit](#), which is, as a non-profit limited liability company, a spin-off of the [Disaster Research Unit](#) at the Free University of Berlin. The series is part of the research project "[CoronaSys: Addressing the corona pandemic in Armenia through systemic risk management](#)", sponsored by the German Federal Ministry of Education and Research.

*If you have any questions, suggestions, or if you wish to be taken on (or off) the project mailing list for CoronaSys updates, innovation sheets, and workshop invitations, please send a message to Janina Schäfer ([schaefer@akfs.de](mailto:schaefer@akfs.de)). For general project inquiries, you may contact the team lead Sara Merkes ([merkes@akfs.de](mailto:merkes@akfs.de)) or the project lead Martin Voss ([voss@akfs.de](mailto:voss@akfs.de)).*

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