

Experts evaluate link between hand size difference and COVID-19 severity

November 2 2022, by Kathy Thomas



Anonymous COVID patient having their hands examined by researcher wearing full PPE. Credit: Swansea University

The difference in finger length between a person's left and right hand

may provide vital information about how ill they could get if they contract COVID-19.

Although it is generally seen as a mild disease in most patients, in some cases COVID progresses to acute illness, causing hospitalization. To help inform effective [public health](#) measures it is important to identify those patients who are at risk of severe illness. This is theme of research involving Swansea University experts.

During the pandemic the most severe COVID symptoms were experienced by [elderly patients](#) and males. Therefore, experts say the later-life decline in male testosterone may be associated with hospitalization.

It is thought that there is testosterone-linked information in the relative lengths of the fingers, the digit ratios. In comparison to women, men have longer 5th (little) and 4th (ring) fingers relative to the 3rd (middle) and 2nd (index) [digits](#).

These digit ratios (2D:4D and 3D:5D) often differ in right and left hands and such differences may contain information with regard to testosterone and COVID-19 severity.

Now digit ratio expert Professor John Manning, of the Applied Sports, Technology, Exercise and Medicine (A-STEM) research team, has been working with colleagues from the Medical University of Lodz in Poland to look more closely at the subject.

Their most recent paper, published in *Frontiers in Public Health*, has reported links between right-left asymmetries of digit ratios and hospitalization for COVID-19.

Professor Manning said, "Large right-left hand differences in 2D:4D and

5D:3D are associated with COVID-19 severity. It is hoped that an understanding of such associations may lead to an increase in our ability to accurately identify at-risk individuals."

Their findings follow on from research published earlier this year which explored COVID-19 severity and its relation low testosterone and possibly high estrogen in both men and women.

He added, "Our research is helping to add to an understanding of severe COVID-19. Hospitalization is most common in the elderly and in men but there are many elderly men who experience mild COVID-19 symptoms.

"Conversely, youth and the female gender do not guarantee mild symptoms of the disease. Our research may help to identify those at greatest risk of hospitalization across age groups."

More information: Anna Kasielska-Trojan et al, Right–left digit ratios, a novel form of asymmetry: Patterns of instability in children and relationships to platelet counts and hospitalization in adults with COVID-19, *Frontiers in Public Health* (2022). [DOI: 10.3389/fpubh.2022.995025](https://doi.org/10.3389/fpubh.2022.995025)

Provided by Swansea University

Citation: Experts evaluate link between hand size difference and COVID-19 severity (2022, November 2) retrieved 25 April 2024 from <https://medicalxpress.com/news/2022-11-experts-link-size-difference-covid-.html>

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