Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

For example, if R_0^{wj} equals 1·1 in the absence of interventions (red line), any of the following three interventions would be effective: (1) not admitting 9% of potential inmates to the jail; (2) releasing 20% of inmates after an average of 11 days in jail; or (3) releasing all inmates after an average of 39 days in jail. If R_0^{wj} equals 1·5 in the absence of interventions (blue line), more extreme interventions would be necessary to prevent an outbreak occurring—for example, (1) not admitting 33% of potential inmates to the jail; (2) releasing 60% of inmates after an average of 8 days in jail; or (3) releasing all inmates after an average of 16 days in jail.

The actual value of R_0^{wj} in any jail is currently unknown. However, the basic reproduction number, R_0, for COVID-19 epidemics in the general population is high (eg, 3·38).[4] If R_0^{wj} is that high, releasing low-risk offenders early and admitting fewer inmates will mitigate (to some degree) outbreaks occurring in jails—ie, reduce the number of infections and deaths. However, it is unlikely that it would be possible to prevent major outbreaks occurring.

We declare no competing interests.

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Calling for a COVID-19 One Health Research Coalition

Emerging from its ancestral bat host in December, 2019,[1] possibly at a wildlife trading market in Wuhan, China,[2] severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) had by mid-April, 2020, spread globally, infecting more than 2 million individuals and causing at least 130 000 deaths. Travel restrictions were imposed, borders sealed, schools and businesses closed, and more than half of humanity locked down, all to reduce the spread of this virus.

Coronavirus disease 2019 (COVID-19) is not just a global pandemic caused by the zoonotic SARS-CoV-2 but represents a critical pivot point in modern times, joining only a few episodes in recorded history. The unique features of this world-changing event are its suspected origin at the human–environment–animal interface and its rapid explosion as a result of unprecedented levels of human interconnectivity, mobility, and global trade.[3] COVID-19 epitomises why One Health, which recognises the fundamental interconnectedness of humans, animals, and their shared environment, is key to ensuring the healthy and sustainable future of the planet.

There is important global consensus on many issues around health and the sustainability of our socioeconomy and ecosystems. For example, global health challenges, such as emerging and re-emerging infectious diseases, antimicrobial resistance, and non-communicable diseases, are further fuelled by global trends related to climate change, growing populations, consumerism, poverty, conflict, and migration.[4] However, a great deal still remains unclear or unknown. The world cannot afford to proceed without some foresight because missteps can lead to disaster. Neither can the world afford to be rigid in the charted path. Flexibility will be required as knowledge advances. Research anchored in the recognition that the health of our planet hinges on symbiotic relationships between humans, animals, and the environment that we share and in the understanding that we are interconnected by default must gather evidence for a framework within which to interpret and apply this evidence towards preventing further global catastrophes.

The Chairs of the *Lancet* One Health Commission, together with colleagues, call for the establishment of an inclusive and transparent COVID-19 One Health Research Coalition to strengthen linkages with the evolving climate change and planetary health research community. This multidisciplinary and multilateral coalition would galvanise the research community and research funders towards designing, undertaking, coordinating, and synthesising research at the human–environment–animal interface for the creation of a healthy and sustainable reconnected future for our planet.

ASW and JHA are co-Chairs of the *Lancet* One Health Commission. All other authors declare no competing interests.

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The COVID-19 One Health Research Coalition is in the interim being hosted by the Oslo-based Secretariat of the *Lancet* One Health Commission. Inquiries regarding the coalition may be sent to secretariat@covid19onehealth.org

For **WHO's COVID-19 Data Explorer** see https://covid19.who.int/explorer

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See Online for appendix

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Obesity could shift severe COVID-19 disease to younger ages

Coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 was first reported in China in late December, 2019, and has since evolved into a global pandemic. As of April 29, 2020, COVID-19 has been confirmed in more than 3 million individuals in 185 countries and regions, with an overall mortality rate of more than 6%.[1] Severe disease involves bilateral interstitial pneumonia requiring intensive care unit (ICU) ventilatory support and can evolve into adult respiratory distress syndrome with high mortality. The largest study of 1591 ICU patients from Italy reported a median age of 63 years, with only 203 patients (13%) younger than 51 years.[2] Common comorbidities are hypertension, cardiovascular disease, type 2 diabetes, and, more rarely (42 [4%] of 1043), obstructive pulmonary disease. Similar data have been reported from China.[3]

When the COVID-19 epidemic began in the USA, we anticipated a similar ICU population. News reports and communications from the US Federal Government had emphasised that COVID-19 was a particular problem for older people, and a resistance to social distancing and sheltering in place by younger people might have been informed by this idea. However, as the pandemic hit the Johns Hopkins Hospital in late March, 2020, younger patients began to be admitted to our ICU, many of whom were also obese. An informal survey of colleagues directing ICUs at other hospitals around the country yielded similar findings. At this time, news editorials were noting obesity as an underappreciated risk factor for COVID-19.[4] This risk is particularly relevant in the USA because the prevalence of obesity is around 40%, versus a prevalence of 6·2% in China, 20% in Italy, and 24% in Spain.[5]

With use of least squares univariate and multivariate linear regression, we examined the correlation between body-mass index (BMI) and age in patients with COVID-19 admitted to ICU at university hospitals at Johns Hopkins, University of Cincinnati, New York University, University of Washington, Florida Health, and University of Pennsylvania (appendix). Acquisition of the de-identified data for this analysis was approved by the Johns Hopkins University Institutional Review Board.

In our dataset of 265 patients (58% male patients), we found a significant inverse correlation between age and BMI, in which younger individuals admitted to hospital were more likely to be obese (figure). There was no difference by sex (p=0·9). The median BMI was 29·3 kg/m², with only 25% of individuals having a BMI of less than 26 kg/m², and 25% exceeding a BMI of 34·7 kg/m².

Obesity can restrict ventilation by impeding diaphragm excursion, impairs immune responses to viral infection,[6] is pro-inflammatory, and induces diabetes and oxidant stress to adversely affect cardiovascular function.[7] We conclude that in populations with a high prevalence of obesity, COVID-19 will affect younger populations more than previously reported. Public messaging to younger adults, reducing the threshold for virus testing in obese individuals, and maintaining greater vigilance for this at-risk population should reduce the prevalence of severe COVID-19 disease.

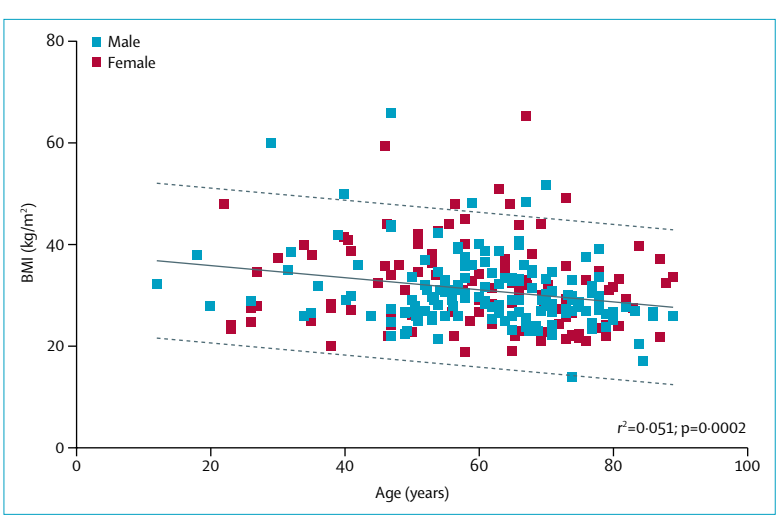

Figure: **Negative correlation between BMI and age in 265 patients with coronavirus disease 2019 in intensive care units in the USA**
BMI=body-mass index. The solid line is the least squares linear regression model fit. Dashed lines are 95% prediction bands.

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