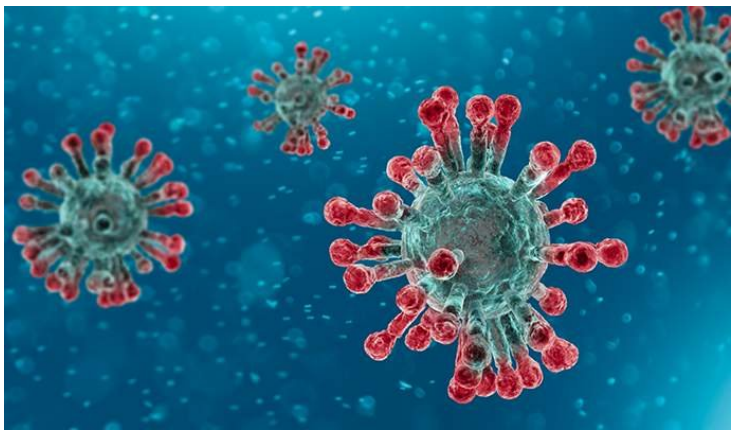
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Weizmann Institute scientists present a mathematical model for restarting the economy

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The model that the scientists developed is based on intermittent lockdown



If you fast for two months, you will lose weight, but you will almost certainly die. Similarly, a two-month lockdown might suppress the coronavirus, but it threatens to kill the economy. The lockdown is pushing hundreds of millions of people globally into unemployment and poverty. But, like the starving dieter whose weight shoots up once he starts eating, letting everyone rush back to work could restart the epidemic as those still carrying the virus refuel another cycle of infection. If this leads to new lockdowns – a sort pf “yoyo” effect – when the dust settles, more people will have died of hunger than of the coronavirus.

Prof. Uri Alon of the Weizmann Institute of Science and his graduate students Omer Karin and Yael Korem-Kohanim, together with senior engineer Boaz Dudovich of Applied Materials, suggest, based on an epidemiological model they developed, a policy that should effectively suppress the coronavirus and at the same time, allow sustainable, albeit reduced, economic activity. The model that the scientists developed is based on intermittent lockdown: five days of lockdown and two days of work every week. In this way, the virus replication number, i.e., the number of people infected by each infectious person, drops below one – the magic number that causes the epidemic to decline.

A four-day work/ten-day lockdown strategy is even better, as those who become infected at work but are asymptomatic would stop being infectious at home. Prof. Alon suggests that after several such work/home cycles, the number of people carrying the virus could drop dramatically. The epidemic would, at that point be contained until sufficient testing, an effective treatment or a vaccine is developed, removing the need for a lockdown.

Intermittent lockdown may be the only viable option for countries that can’t deploy sufficient testing for large parts of the population. The strategy could enable millions to be employed, and sustain key economic sectors in the process. For workers, holding a 40% position rather than collecting unemployment would be a boon both mentally and financially.

Fixed workdays would allow workers and managers to plan, and companies to reach a sustainable level of production. “Our main intent,” says Prof. Alon, “is to open up the discussion on lockdown and point out that a well-designed, smart lockdown strategy can suppress the epidemic and sustain the economy.”

Prof. Uri Alon's research is supported by the Jeanne and Joseph Nissim Center for Life Sciences Research; the Braginsky Center for the Interface between Science and the Humanities; the Kahn Family Research Center for Systems Biology of the Human Cell; the Sagol Institute for Longevity Research; the Zuckerman STEM Leadership Program; the Rising Tide Foundation; the Estate of Olga Klein – Astrachan; and the European Research Council; the ERC synergy program and Cancer Research UK. Prof. Alon is the incumbent of the Abisch-Frenkel Professorial Chair