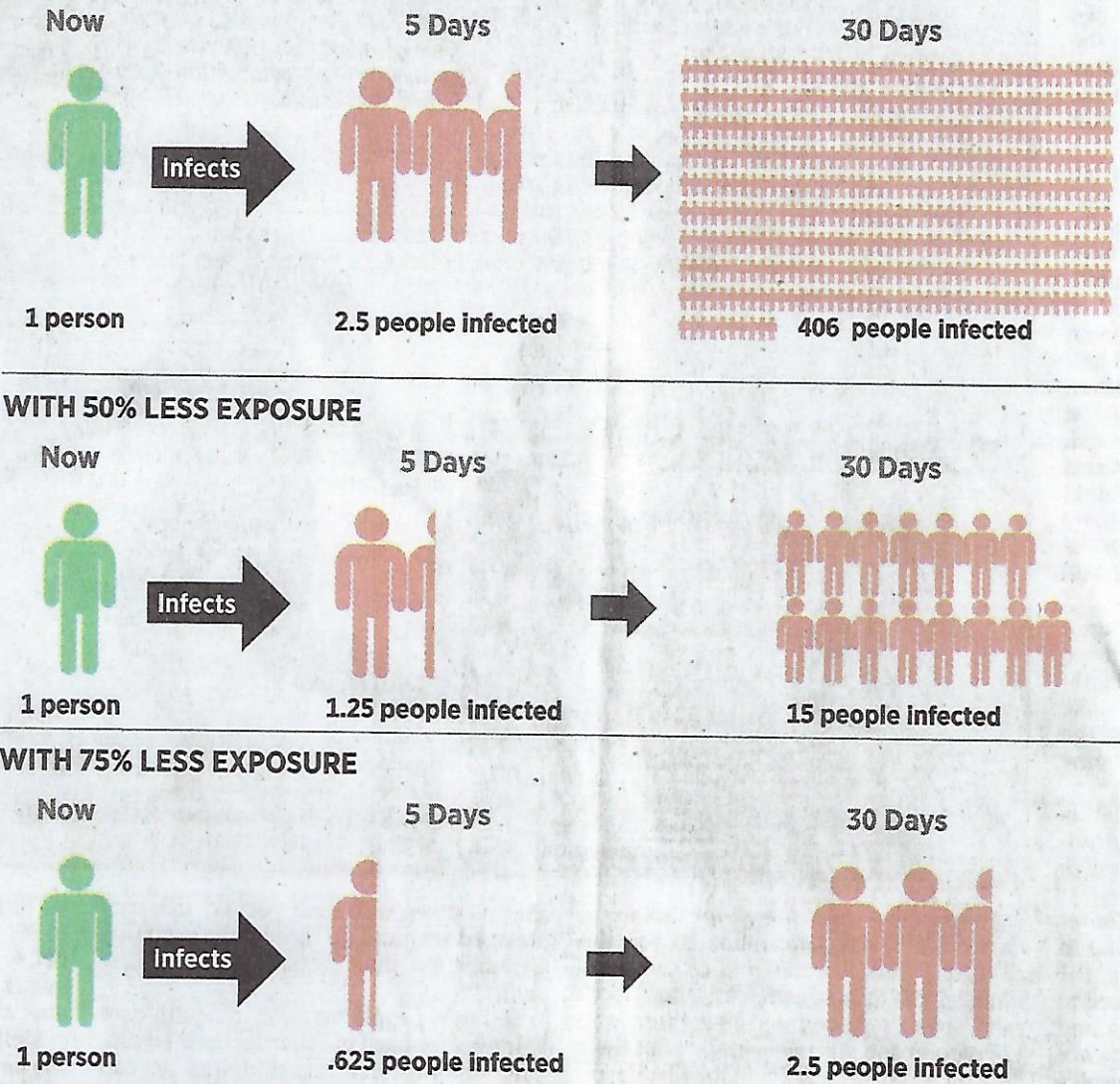# The Math Behind Social Distancing

Symptoms of COVID-19 develop an average of five days after infection. During that time, the virus can be transmitted, although we don't know how easily. If an infected person transmits the virus to 2.5 other people, and those people each transmit to 2.5 more people, and so on, 406 people would be infected within 30 days. With stringent social distancing, that number can be reduced enough to stop, or at least curb, the spread.

Now	5 Days	30 Days
1 person	Infects → 2.5 people infected	→ 406 people infected

WITH 50% LESS EXPOSURE

Now	5 Days	30 Days
1 person	Infects → 1.25 people infected	→ 15 people infected

WITH 75% LESS EXPOSURE

Now	5 Days	30 Days
1 person	Infects → .625 people infected	→ 2.5 people infected

SOURCE: University of California San Diego biologist Robert A.J. Signer and art director Gary Warshaw

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clearly and simply conveys the effect of reducing exposure to the virus through social distancing.

Here's their math: Symptoms of the respiratory illness develop on an average of five days after infection. During those five days, called the incubation period, the virus can spread. If the rate of spread is the same for those with and without symptoms, then one infected person transmits the virus to 2.5 other people on average, and those 2.5 people each transmit to 2.5 more people, and so on. Within 30 days, 406 people would be infected.