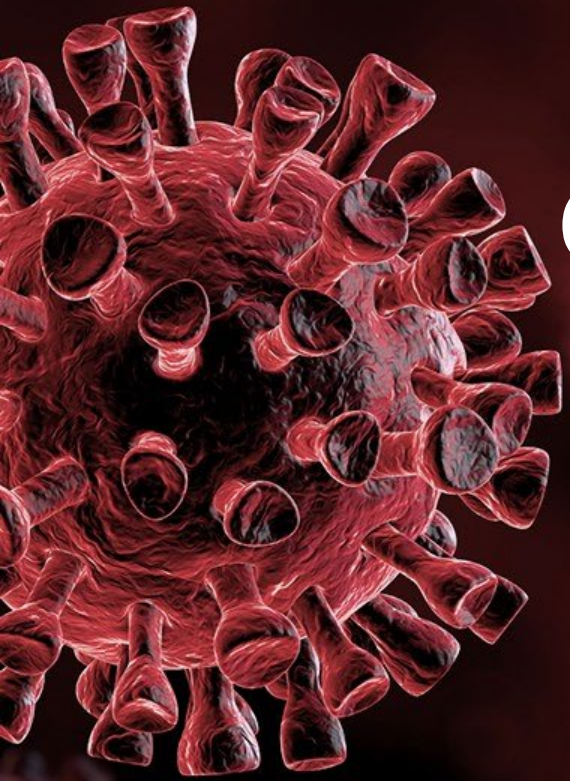
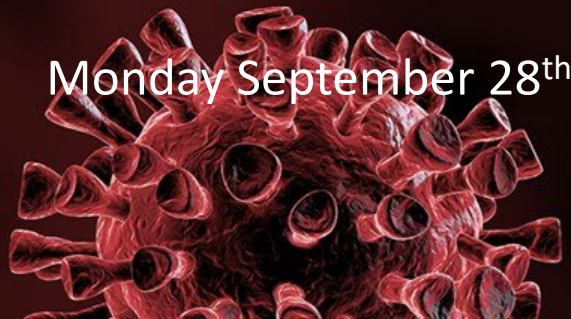
NORTHEAST
BUSINESS GROUP ON HEALTH



COVID-19 Update

Dr Mark Cunningham-Hill
Medical Director NEBGH

Monday September 28th 2020

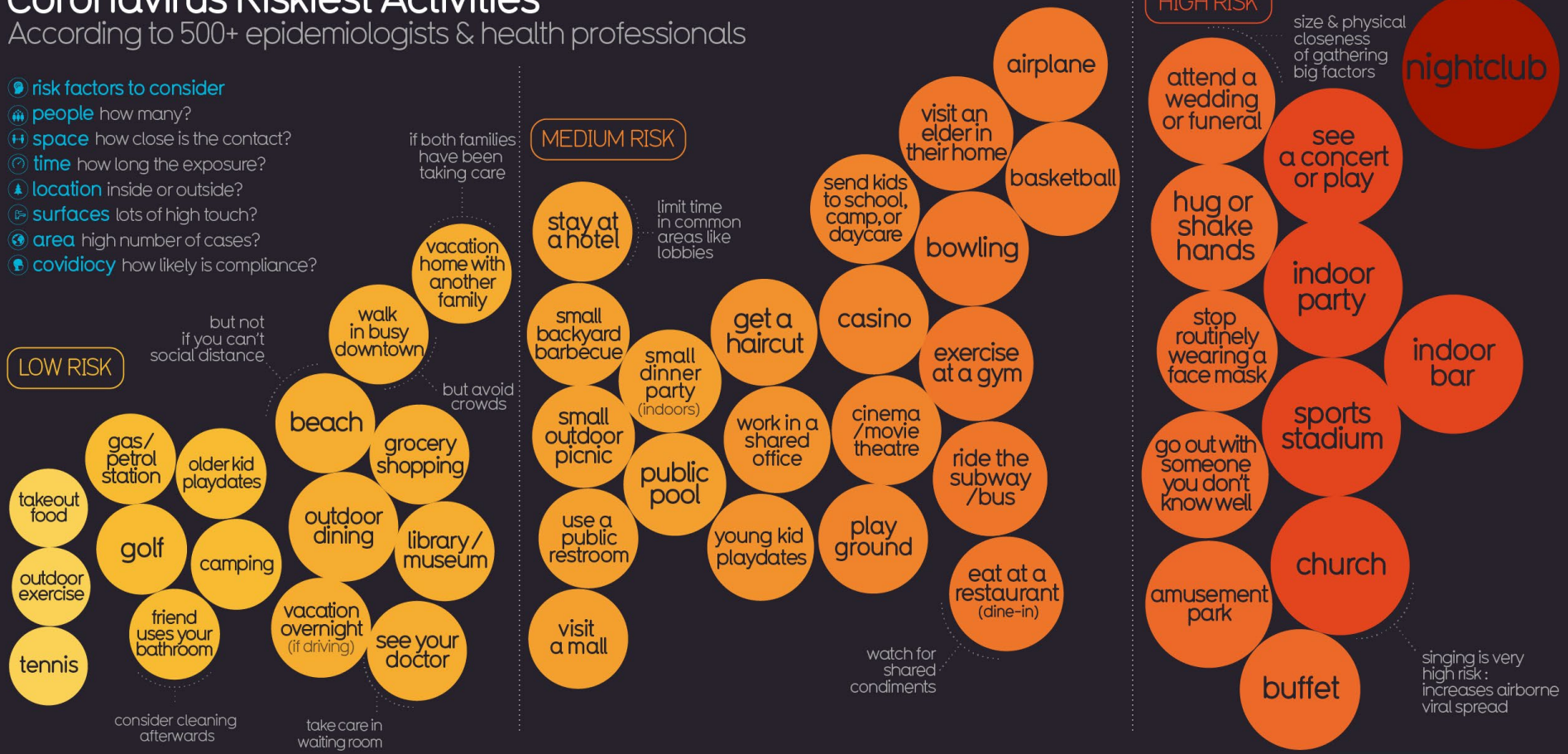


What is safe to do?

Coronavirus Riskiest Activities

According to 500+ epidemiologists & health professionals

- risk factors to consider
- people how many?
- space how close is the contact?
- time how long the exposure?
- location inside or outside?
- surfaces lots of high touch?
- area high number of cases?
- covidiocy how likely is compliance?



INCREASING RISK →

Risk reduced by wearing a mask, social distancing & washing hands

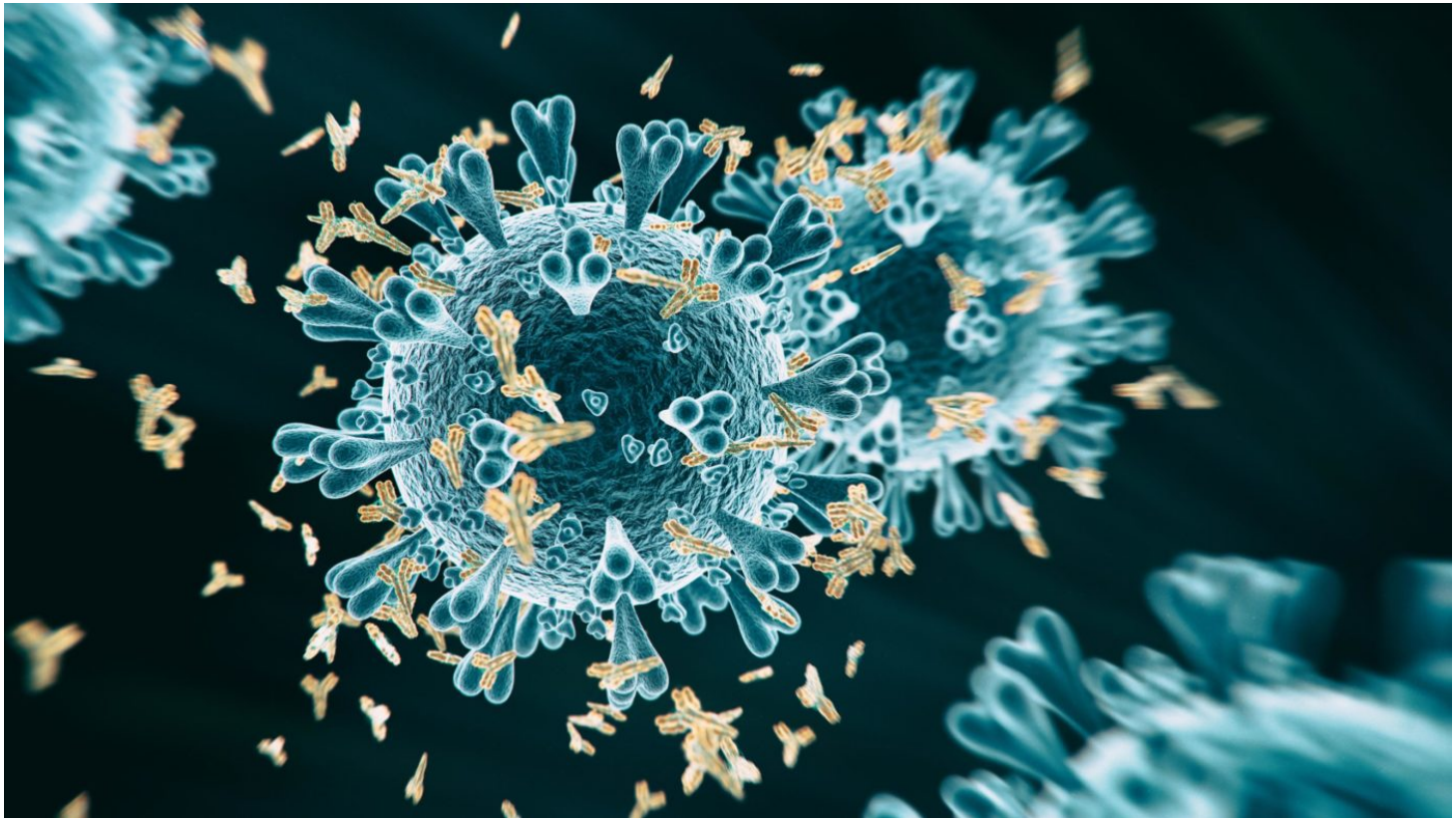
informationisbeautiful

sources: New York Times, Reuters, NPR, SF Gate & others

Is Flying Safe

- London Hanoi Flight – Infected passenger infected 15 people
- US to Taiwan 12 COVID+ cases and no transmission
- The risk of catching the virus on a full flight is just 1 in 4,300. falling to 1 in 7,700 if the middle seat is vacant (everyone masked)
- Window seat is a little safer than the middle seat or the aisle seat

Immunity

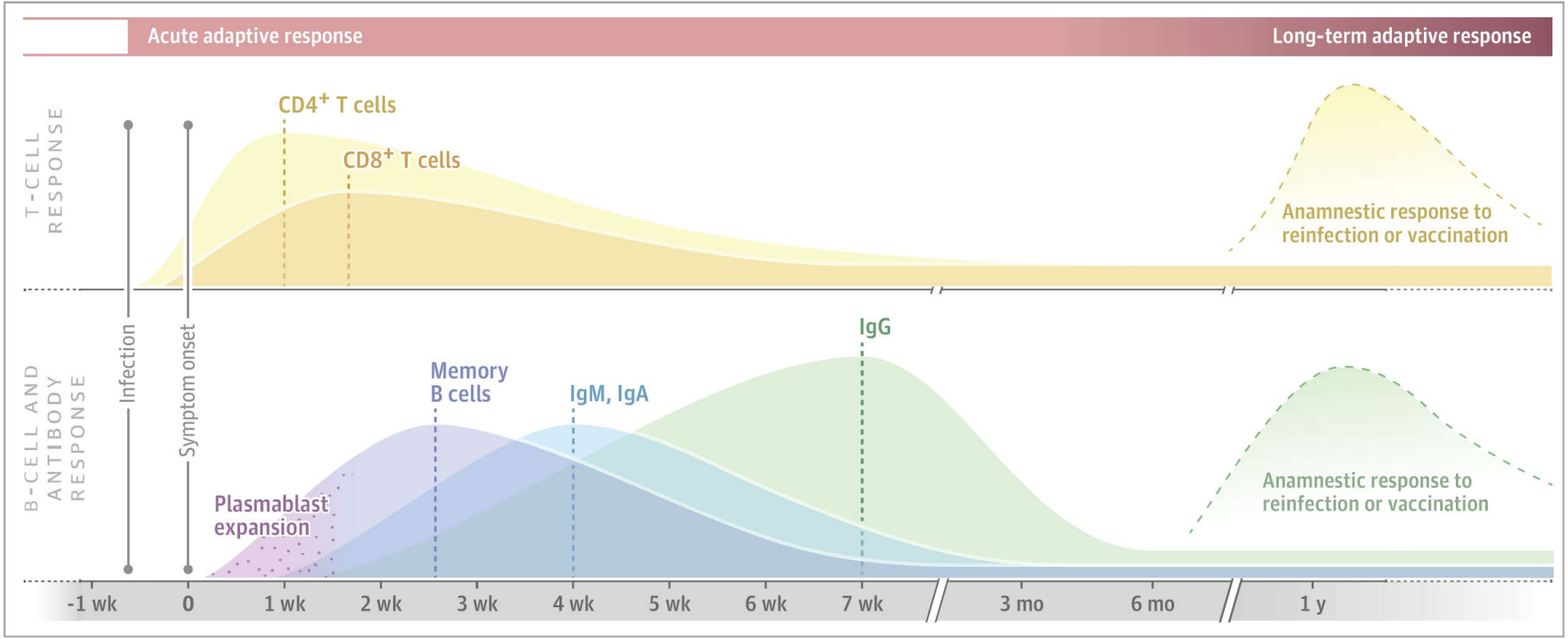


T Cells & B Cells

- B lymphocytes and T lymphocytes work together to fight infection.
- Both cells are white blood cells.
- Both cells are involved in the adaptive immune system.
- Both cell types are produced by bone marrows.

T Cells vs B Cells	
T Cells are a type of lymphocytes that are involved in cell mediated immunity.	B Cells are a type of lymphocytes that are involved in humoral immunity.
Maturity	
T Cells mature in the thymus.	B Cells mature in the blood stream.
Production of Antibodies	
T Cells do not produce antibodies.	B Cells produce antibodies.

Immunity


Acute adaptive response
Long-term adaptive response
T-CELL RESPONSE
CD4+ T cells
CD8+ T cells
Anamnestic response to reinfection or vaccination
B-CELL AND ANTIBODY RESPONSE
Infection
Symptom onset
Memory B cells
IgM, IgA
IgG
Plasmablast expansion
Anamnestic response to reinfection or vaccination
-1 wk
0
1 wk
2 wk
3 wk
4 wk
5 wk
6 wk
7 wk
3 mo
6 mo
1 y

Pre-existing Immunity

- T cell reactivity against SARS-CoV-2 has been observed in unexposed people
- It is speculated that this reflects T cell memory to circulating ‘common cold’ coronaviruses

Pre-existing Immunity

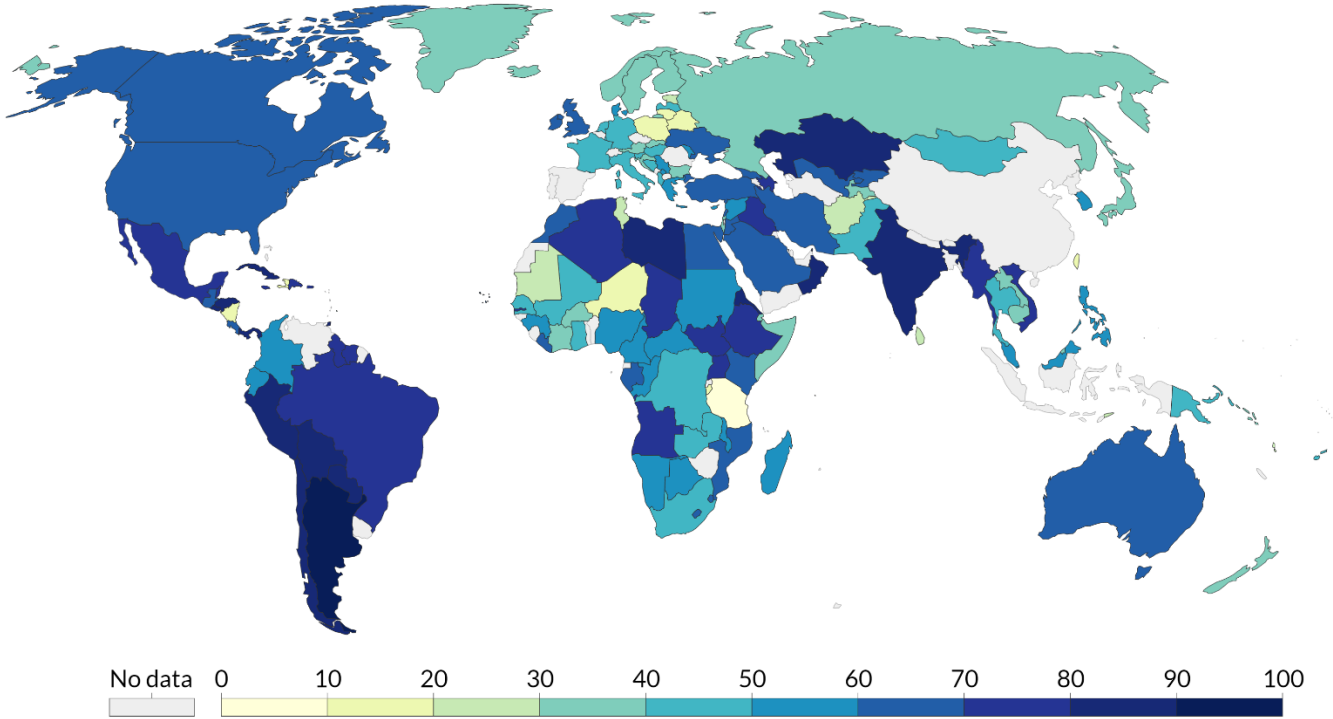
- Examples of outbreaks where majority become infected
- Experience with healthcare workers
- Children:
  - There is evidence that they may be less susceptible to infection
  - Younger children not previously exposed to SARS-CoV-2 also have cross-reactive antibodies, which may help explain the reduced risk
- Infection Immunity vs Disease Immunity

Responding to the Pandemic

COVID-19: Government Response Stringency Index, Sep 28, 2020

Our World in Data

This is a composite measure based on nine response indicators including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100 = strictest). If policies vary at the subnational level, the index is shown as the response level of the strictest sub-region.



Source: Hale, Webster, Petherick, Phillips, and Kira (2020). Oxford COVID-19 Government Response Tracker – Last updated 28 September, 16:30 (London time)

Note: This index simply records the number and strictness of government policies, and should not be interpreted as 'scoring' the appropriateness or effectiveness of a country's response.

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Workplace closures during the COVID-19 pandemic, Sep 28, 2020

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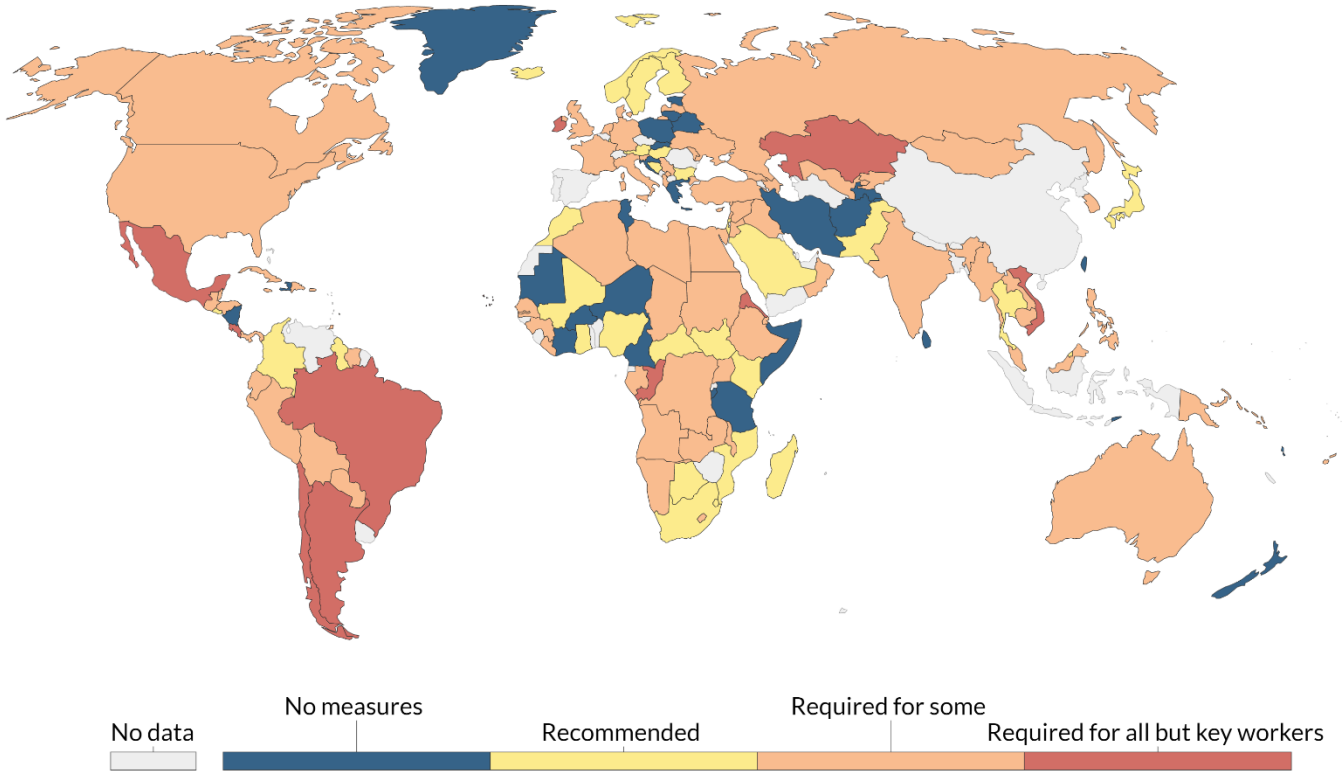

Source: Hale, Webster, Petherick, Phillips, and Kira (2020). Oxford COVID-19 Government Response Tracker – Last updated 28 September, 16:30 (London time)
Note: There may be sub-national or regional differences in policies on workplace closures. The policy categories shown may not apply at all sub-national levels. A country is coded as 'required closures' if at least some sub-national regions have required closures.
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School closures during the COVID-19 pandemic, Sep 28, 2020

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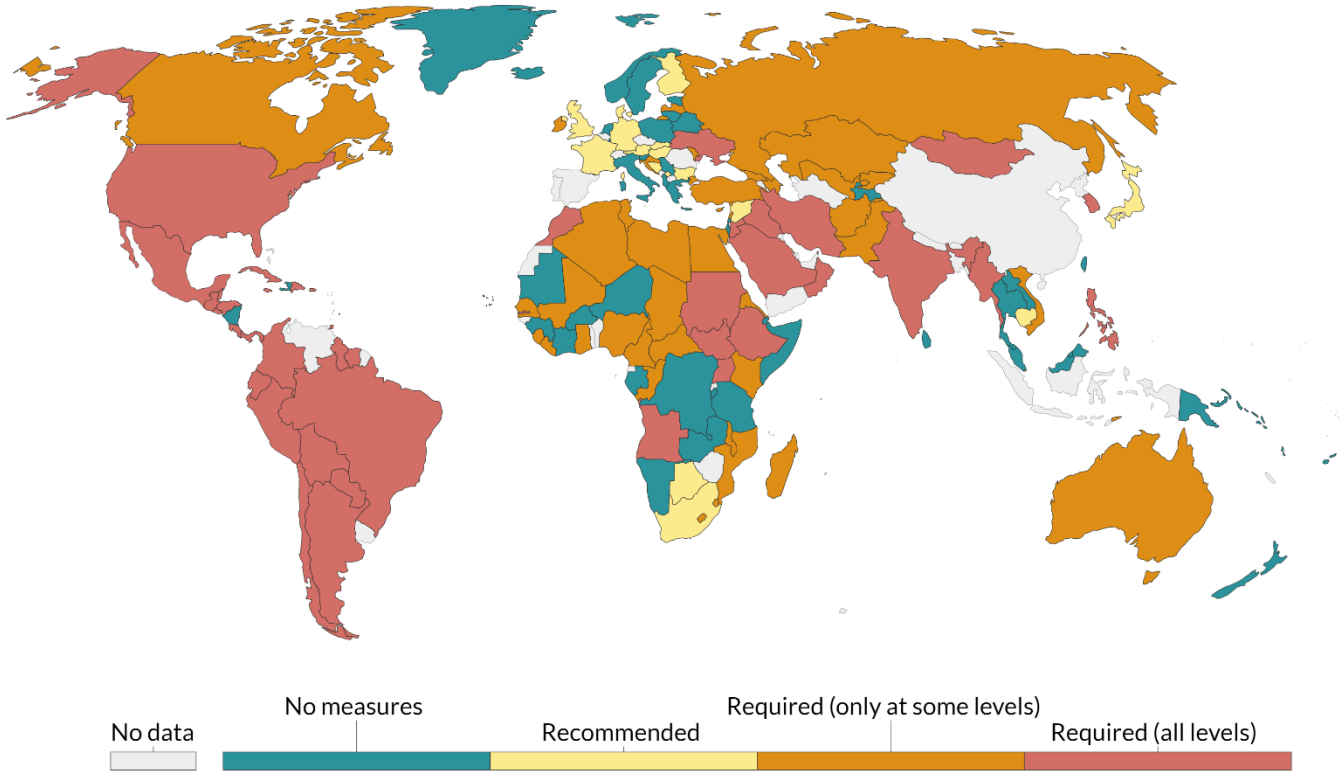

Source: Hale, Webster, Petherick, Phillips, and Kira (2020). Oxford COVID-19 Government Response Tracker – Last updated 28 September, 16:30 (London time)
Note: There may be sub-national or regional differences in policies on school closures. The policy categories shown may not apply at all sub-national levels. A country is coded as 'required closures' if at least some sub-national regions have required closures.
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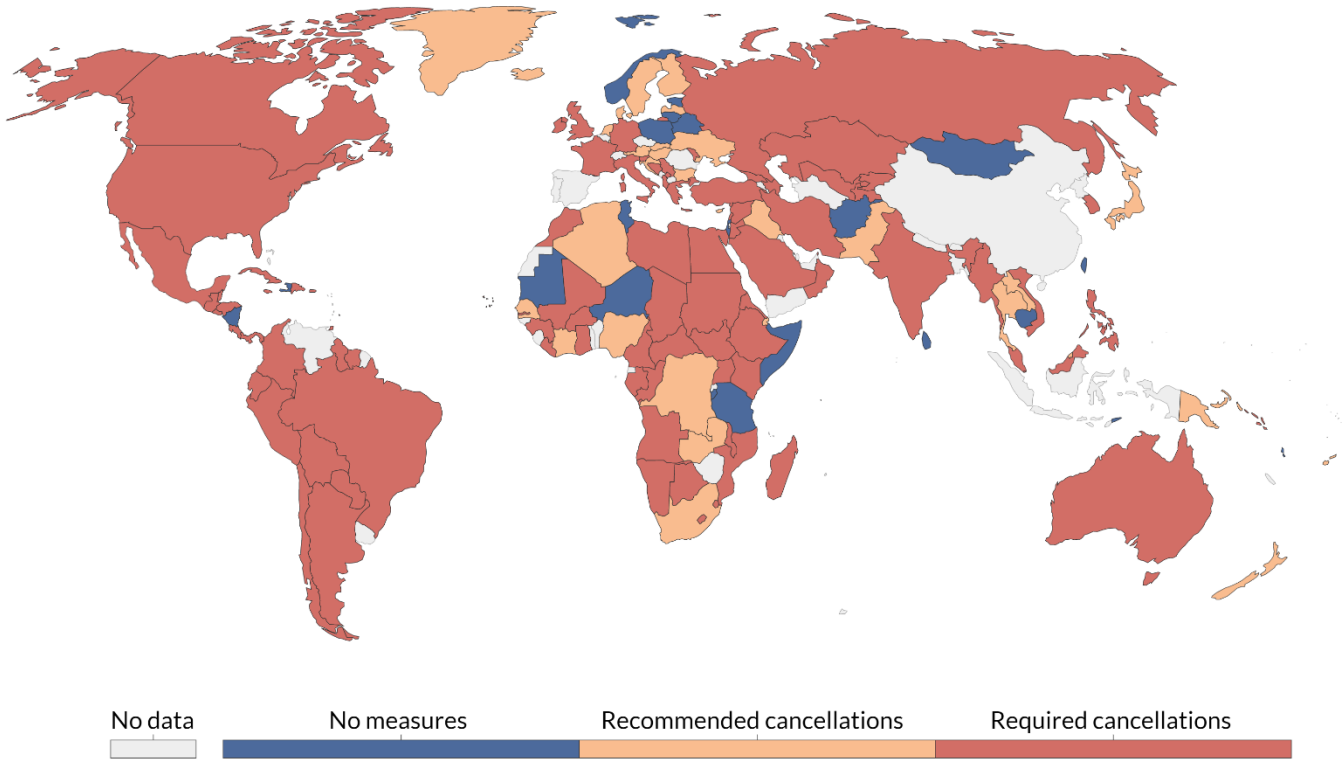
Cancellation of public events during COVID-19 pandemic, Sep 28, 2020

Our World in Data



Source: Hale, Webster, Petherick, Phillips, and Kira (2020). Oxford COVID-19 Government Response Tracker – Last updated 28 September, 16:30 (London time)
Note: There may be sub-national or regional differences in policies on event cancellations. The policy categories shown may not apply at all sub-national levels. A country is coded as 'required' if at least some sub-national regions have required cancellations.
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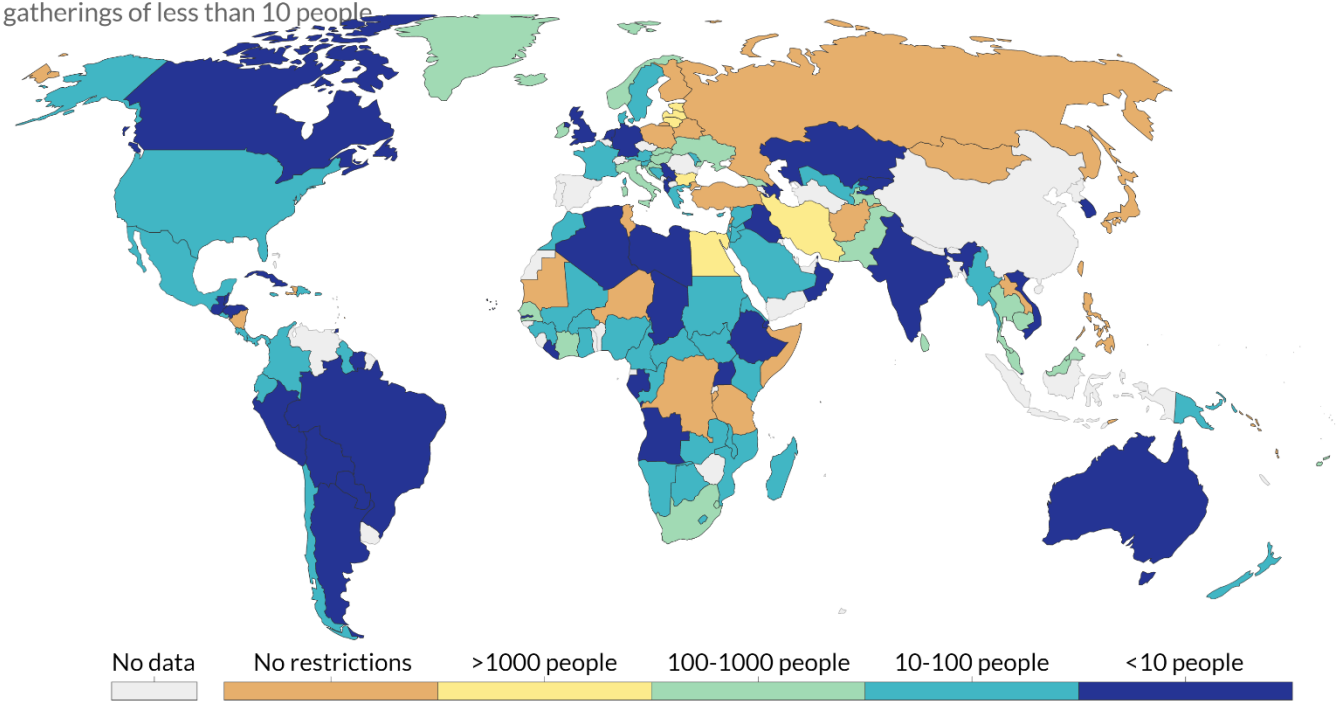
Restrictions on public gatherings in the COVID-19 pandemic, Sep 28, 2020

Our World in Data

Restrictions are given based on the size of public gatherings as follows:
1 - Restrictions on very large gatherings (the limit is above 1000 people)
2 - gatherings between 100-1000 people
3 - gatherings between 10-100 people
4 - gatherings of less than 10 people



Source: Hale, Webster, Petherick, Phillips, and Kira (2020). Oxford COVID-19 Government Response Tracker – Last updated 28 September, 16:30 (London time)
Note: There may be sub-national or regional differences in restrictions. The policy categories shown may not apply at all sub-national levels. A country is coded as having these restrictions if at least some sub-national regions have implemented them.
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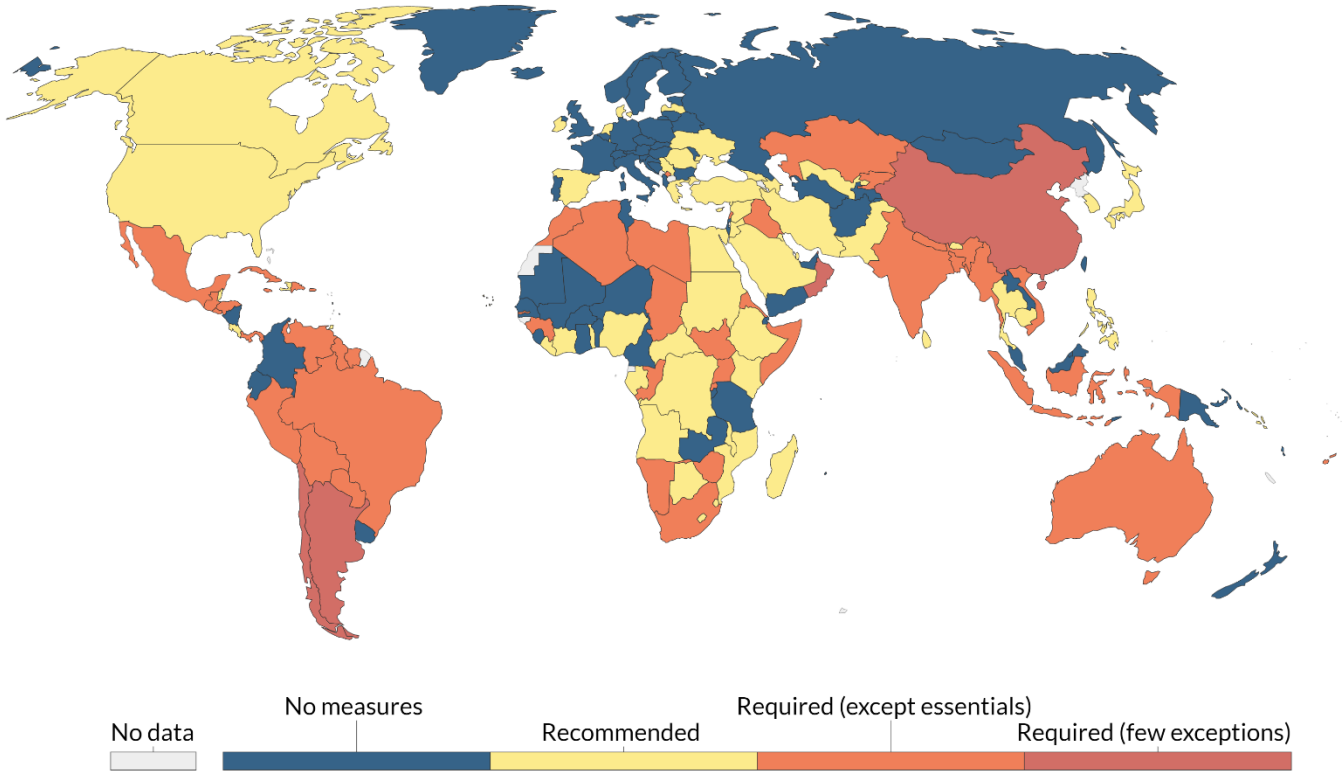
Stay-at-home requirements during the COVID-19 pandemic, Sep 28, 2020

Our World in Data



Source: Hale, Webster, Petherick, Phillips, and Kira (2020). Oxford COVID-19 Government Response Tracker – Last updated 28 September, 16:30 (London time)
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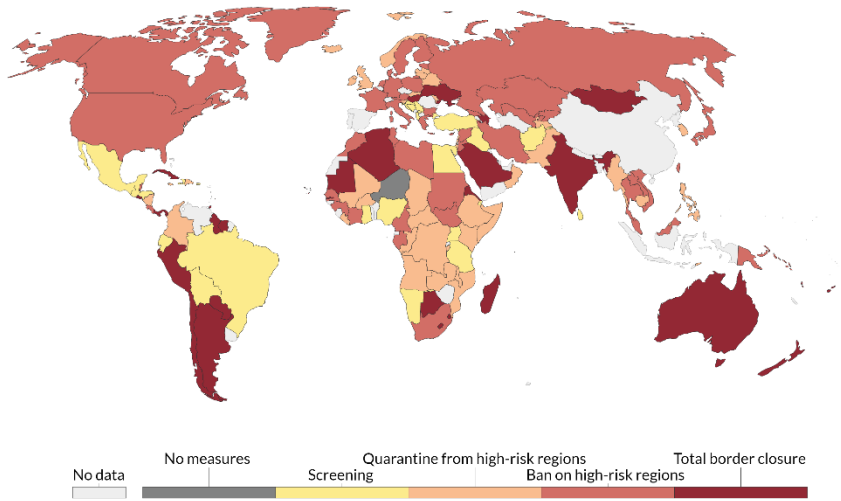
International travel controls during the COVID-19 pandemic, Sep 28, 2020

Our World in Data



Source: Hale, Webster, Petherick, Phillips, and Kira (2020). Oxford COVID-19 Government Response Tracker – Last updated 28 September, 16:30 (London time)
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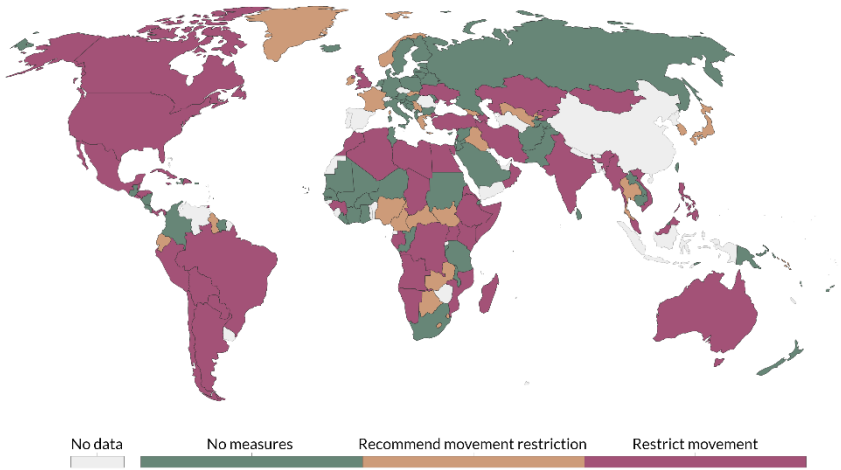
Restrictions on internal movement during the COVID-19 pandemic, Sep 28, 2020

Our World in Data



Source: Hale, Webster, Petherick, Phillips, and Kira (2020). Oxford COVID-19 Government Response Tracker – Last updated 28 September, 16:30 (London time)
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Questions