

How the measures imposed due to COVID-19 influence the human microbiome?

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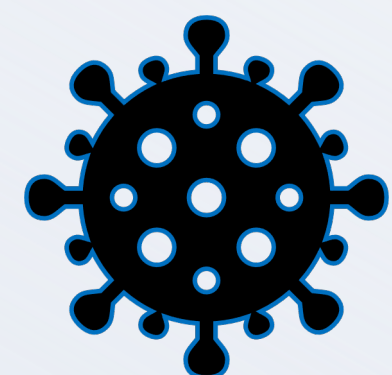
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We argue that hygienic measures imposed to control the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and contain COVID-19 could impact the human microbiome in two different and disparate ways, acting as a double-edged sword in human health.



Here, we suggest that the disruption in microbial sharing, as it is associated with dysbiosis (loss of bacterial diversity associated with an imbalance of the microbiota with deleterious consequences for the host), may worsen the prognosis of COVID-19 disease.

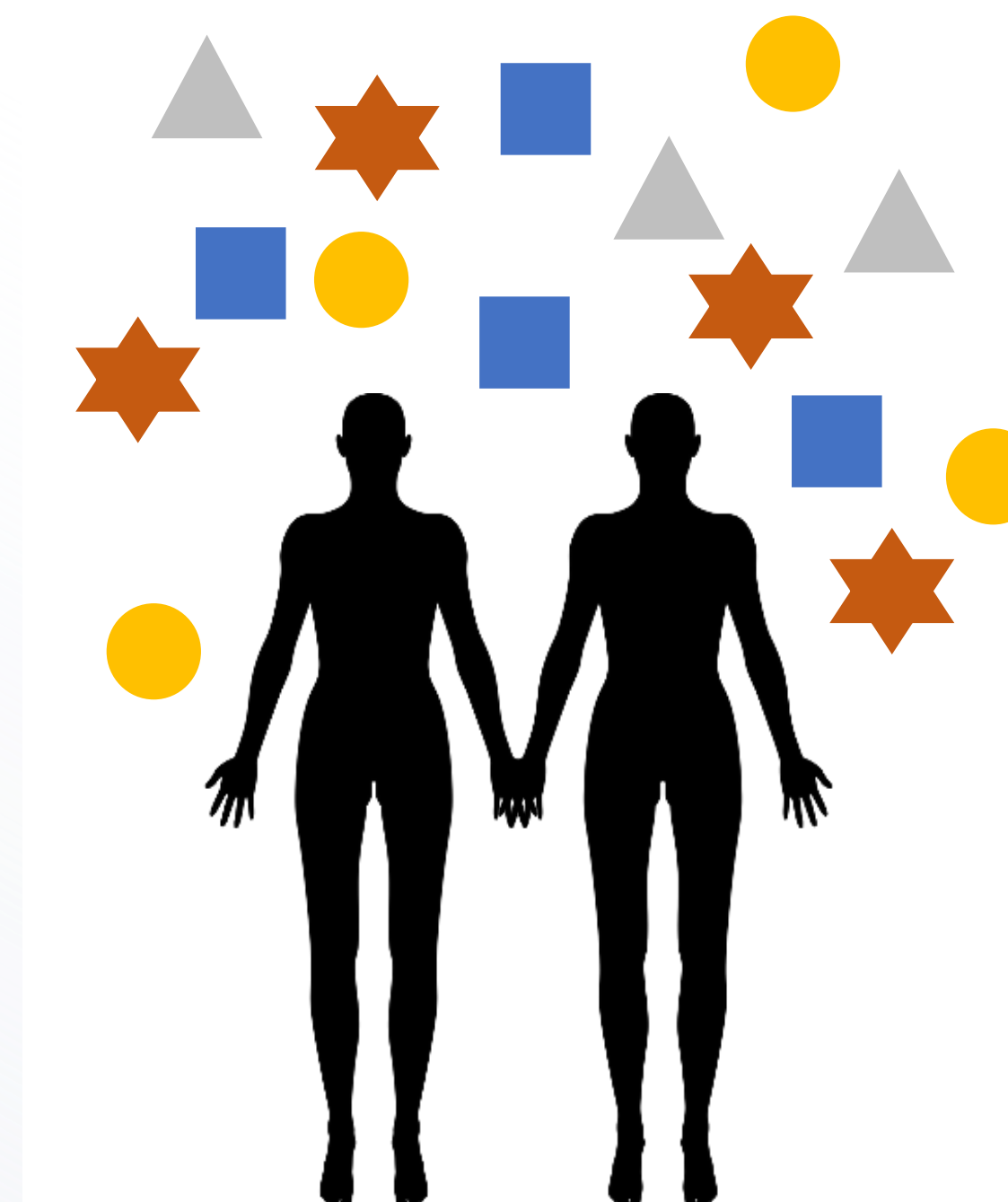


In addition, social detachment can also decrease the rate of transmission of antibiotic-resistant bacteria. Therefore, it seems crucial to perform new studies combining the pandemic control of COVID-19 with the diversity of the human microbiome.



GOAL

Reach an equilibrium between the preservation of the microbial diversity of the human microbiome and infection transmission prevention

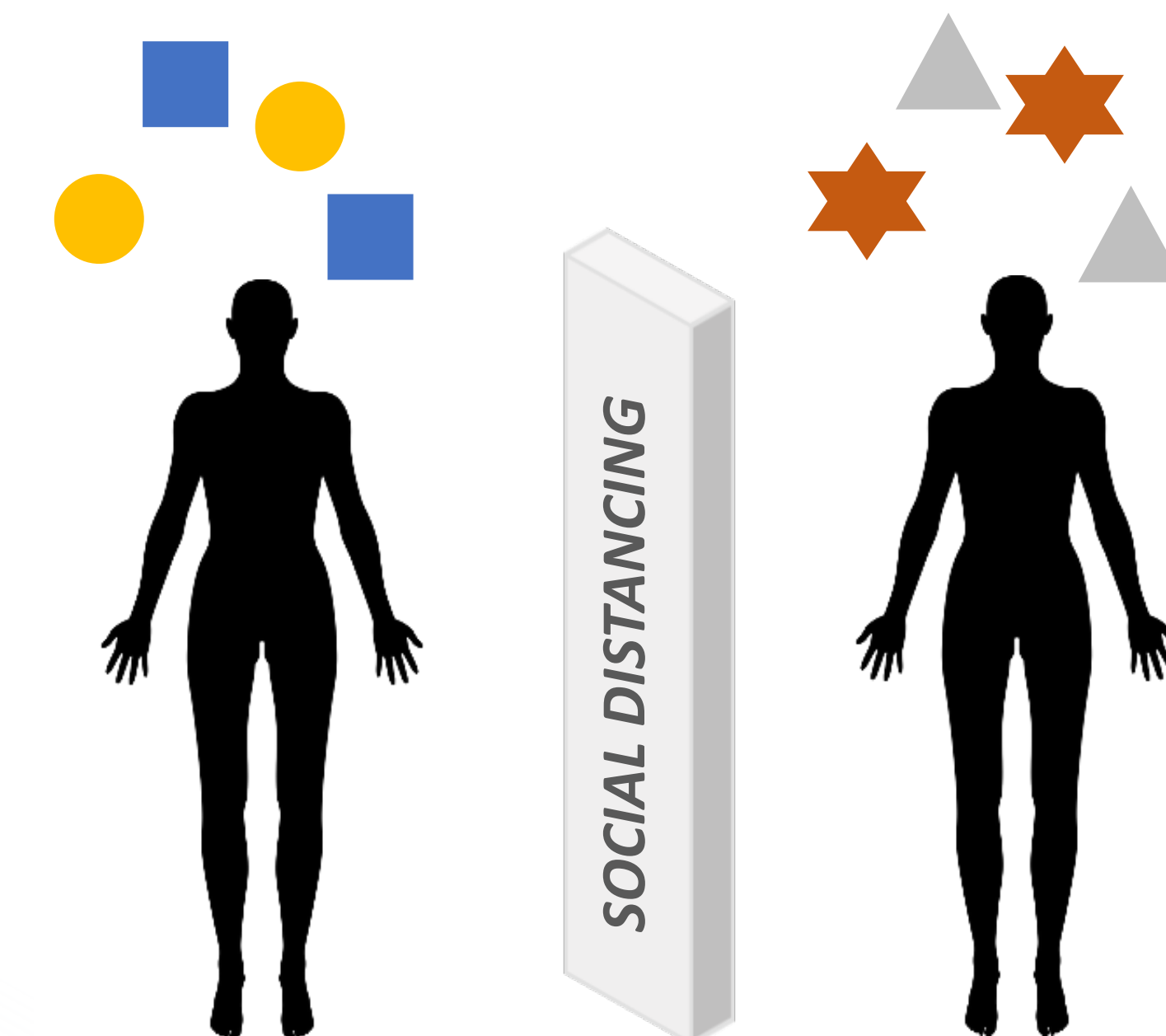


Bacterial diversity of
the human
microbiome &
immune stimulation

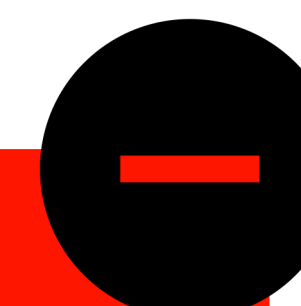


Increased
transmission of
antibiotic-resistance
genes and pathogens
like SARS-CoV-2

Individuals are connected and share their microorganisms (the colored symbols represent microbial diversity), preserving the microbial diversity of their microbiomes but also the sharing of pathogens, such as COVID-19 and antibiotic-resistant bacteria



Reduced
transmission of
antibiotic-
resistance genes
and pathogens like
SARS-CoV-2



Increased
susceptibility to
diseases as COVID-
19 due to dysbiosis

Social distancing is an important tool in preventing the spread of antibiotic-resistant bacteria and pathogens like SARS-CoV-2, but it can trigger dysbiosis leading to the appearance of opportunistic infections and a worse prognosis for COVID-19