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Archived Editions (COVID-19 Genomics and Precision Public Health Weekly Update)

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COVID-19 Genomics and Precision Public Health Weekly Update Content

Pathogen and Human Genomics Studies

- A Novel Diagnostic Test to Screen SARS-CoV-2 Variants Containing E484K and N501Y Mutations. (/PHGKB/phgHome.action?action=forward&dbsource=covUpdate&id=1195)
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- Discovery of human ACE2 variants with altered recognition by the SARS-CoV-2 spike protein. (/PHGKB/phgHome.action?action=forward&dbsource=covUpdate&id=1196)
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transmission in many countries and increasing mobility led to the emergence and spread within the continent of many variants of concern and interest, such as B.1.351, B.1.525, A.23.1 and C.1.1

- Immunogenicity of COVID-19 mRNA Vaccines in Pregnant and Lactating Women. (/PHGKB/phgHome.action?action=forward&dbsource=covUpdate&id=1199)
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- Effectiveness of the Pfizer-BioNTech and Oxford-AstraZeneca vaccines on covid-19 related symptoms, hospital admissions, and mortality in older adults in England: test negative case-control study. (/PHGKB/phgHome.action?action=forward&dbsource=covUpdate&id=1202)
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  Vaccination with either one dose of BNT162b2 or ChAdOx1-S was associated with a significant reduction in symptomatic covid-19 in older adults, and with further protection against severe disease. Both vaccines showed similar effects. Protection was maintained for the duration of follow-up (>6 weeks). A second dose of BNT162b2 was associated with further protection against symptomatic disease. A clear effect of the vaccines against the B.1.1.7 variant was found

- SARS-CoV-2 genomic surveillance identifies naturally occurring truncation of ORF7a that limits immune suppression. (/PHGKB/phgHome.action?action=forward&dbsource=covUpdate&id=1204)
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- Neutralizing antibody levels are highly predictive of immune protection from symptomatic SARS-CoV-2 infection (/PHGKB/phgHome.action?action=forward&dbsource=covUpdate&id=1206)
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  Predictive models of immune protection from COVID-19 are urgently needed to identify correlates of protection to assist in the future deployment of vaccines. To address this, we analyzed the relationship between in vitro neutralization levels and the observed protection from SARS-CoV-2 infection using data from seven current vaccines and from convalescent cohorts. we show that neutralization level is highly predictive of immune protection, and provide an evidence-based model of SARS-CoV-2 immune protection that will assist in developing vaccine strategies to control the future trajectory of the pandemic.

- Rapidly emerging SARS-CoV-2 B.1.1.7 sub-lineage in the United States of America with spike protein

D178H and membrane protein V70L mutations (/PHGKB/phgHome.action?action=forward&dbsource=covUpdate&id=1209)
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- Diverse Functional Autoantibodies in Patients with COVID-19 (/PHGKB/phgHome.action?action=forward&dbsource=covUpdate&id=1211)
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Non-Genomics Precision Health Studies

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