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Details:

- https://professional.heart.org/en/meetings/scientific-sessions
- Submission requirements: https://professional.heart.org/-/media/PHD-Files/Meetings/Scientific-Sessions/2023/SS23-LateBreaking-Science-Submission-Guidelines.pdf?rev=1d1c6107e2b04ac0bf41ba31d81a8090
    - Character Max Limit: (spaces do not count) 2500; 1750 if including graphic
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Risk of Covid-19 Hospitalization or Death by the AHA's Life's Essential 8: The Collaborative Cohort of Cohorts for Covid-19 Research (C4R)

Background:

It is unknown how cardiovascular health (CVH) relates to severe Covid-19 illness in adults without clinical cardiovascular disease (CVD). We hypothesized that more optimal Life's Essential 8 (LE8)-quantified CVH are associated with lower severe Covid-19 risk among US adults without clinical CVD.

Methods:

C4R is ascertaining Covid-19 events in 14 NIH cohorts via questionnaires, serosurvey, and medical record adjudication. We included cohorts with pre-pandemic LE8 measures of body mass index (BMI), blood pressure (BP), lipids, diet, glucose, physical activity, smoking, and sleep in participants without clinical CVD. Covid-19 was defined as severe (hospitalization, death) or non-severe (all other events). Fine-Gray sub-distribution hazard models compared incident Covid-19 by LE8 quartiles, with non-severe and severe Covid-19 as competing risks. Models were censored at first event, stratified by cohort, and adjusted for sociodemographics and vaccinations at time of Covid-19.

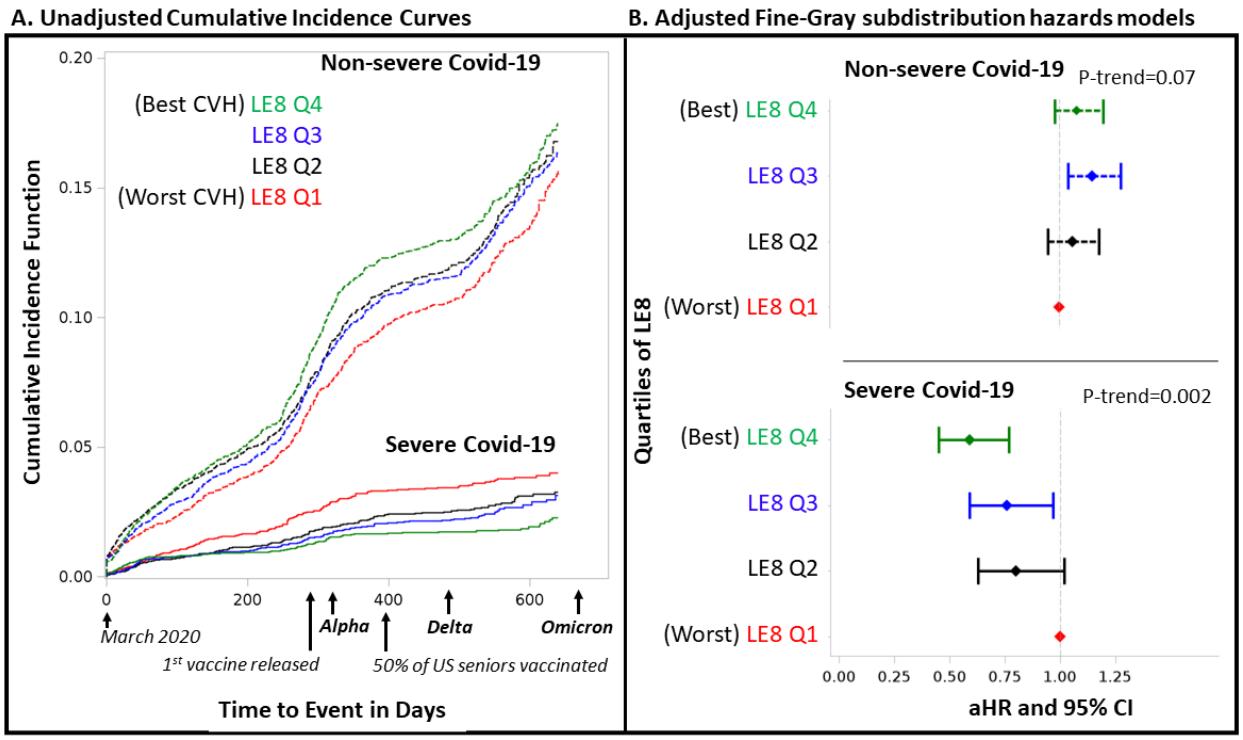
Results:

Among 21,300 participants in 7 cohorts (mean [SD] age 67 years [14], 61% female, 2% American Indian, 4% Asian, 16% Black, 33% White, 43% Hispanic), mean (SD) LE8 was 65 (14). In 3/2020-9/2022, there were 3,034 non-severe and 488 severe Covid-19 cases. The best CVH quartile (Q) 4 had more non-severe and fewer severe Covid-19 events. The Q4 vs. Q1 aHR was 1.08 (95% CI 0.98, 1.20) for non-severe Covid-19 and 0.59 (0.45, 0.77) for severe Covid-19. Examining LE8 components separately, better status on 5 LE8 components (BMI, BP, glucose, physical activity, smoking) was significantly associated with lower risk of severe Covid-19, whereas 3 were not associated (cholesterol, diet, sleep; data not shown).

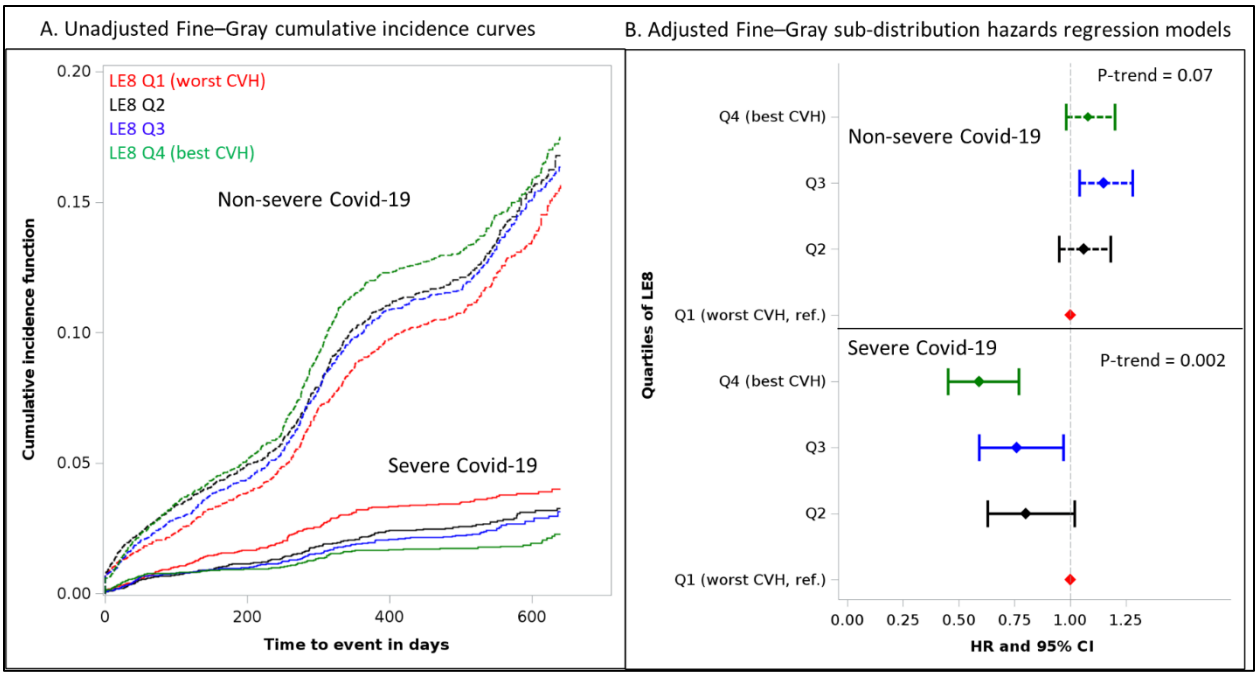
Conclusions:

Better LE8-quantified CVH was associated with 41% lower risk of severe Covid-19 events among adults without clinical CVD. Further research is needed to elucidate mechanisms of Covid-19 resilience and the role of CVH-directed interventions to reduce risks of severe Covid-19.

Figure:



A. Observed cumulative incidence curves showing cumulative failure rates due to Non-severe Covid-19 infections and Severe Covid-19 infections. B. Associations of quartiles of LE8 with incident Non-severe and Severe Covid-19 infections were analyzed using Fine-Gray proportional sub-distribution hazards models. Models were adjusted for baseline age, sex, race/ethnicity, educational attainment, and region. Cohort was treated as a stratum term to allow for different baseline hazards.



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