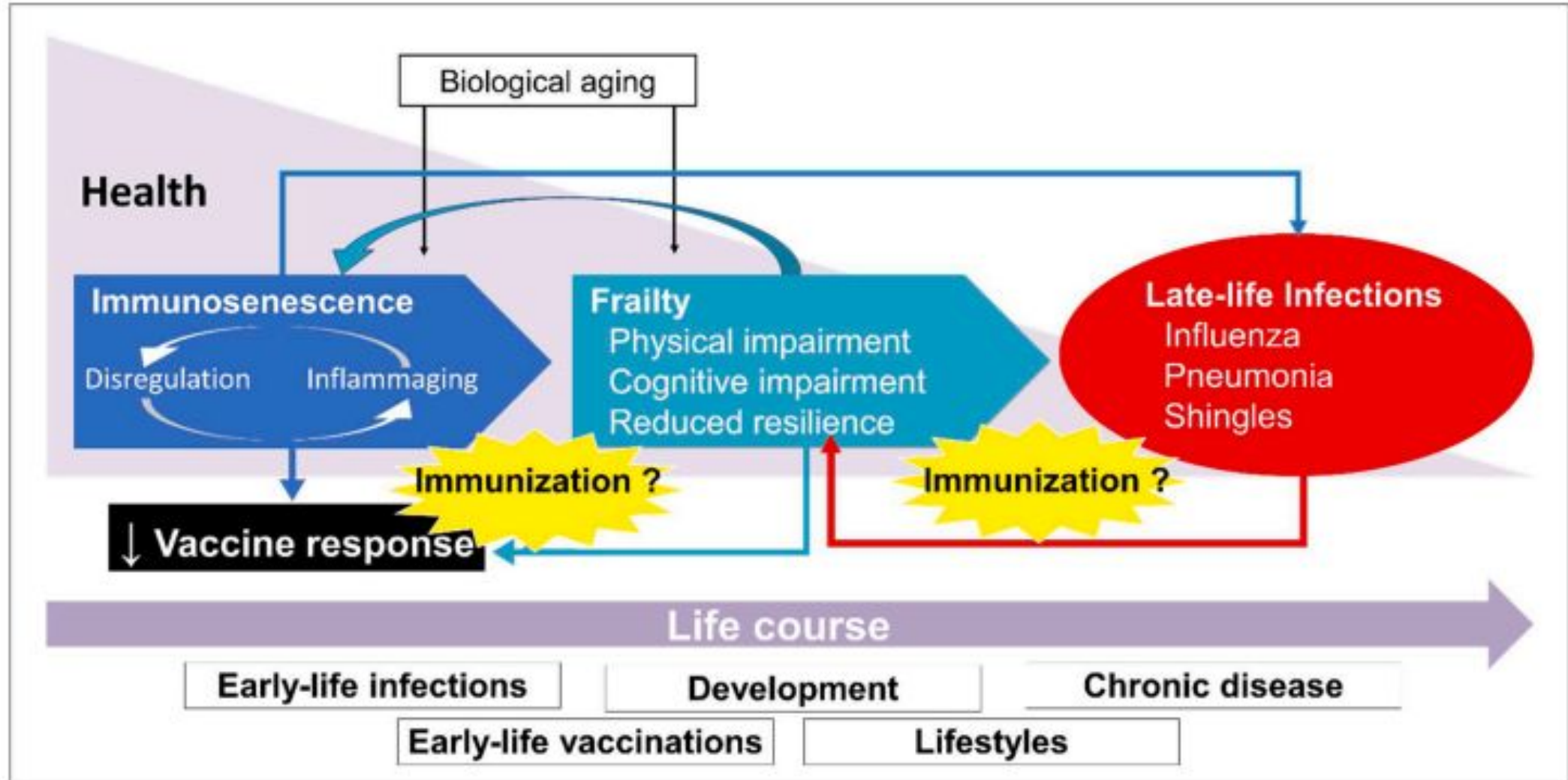


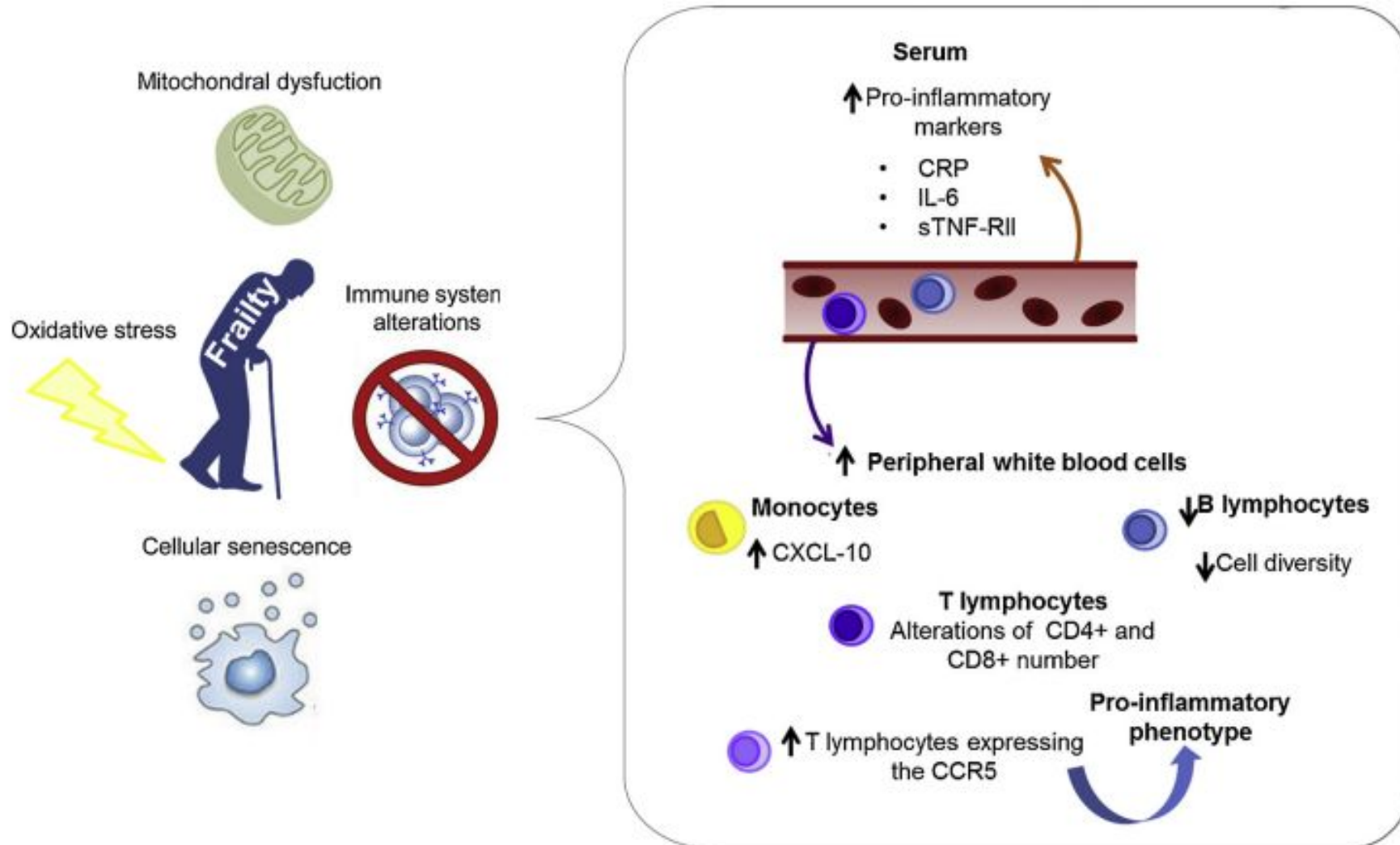
The interdependency of infections, immunity and frailty



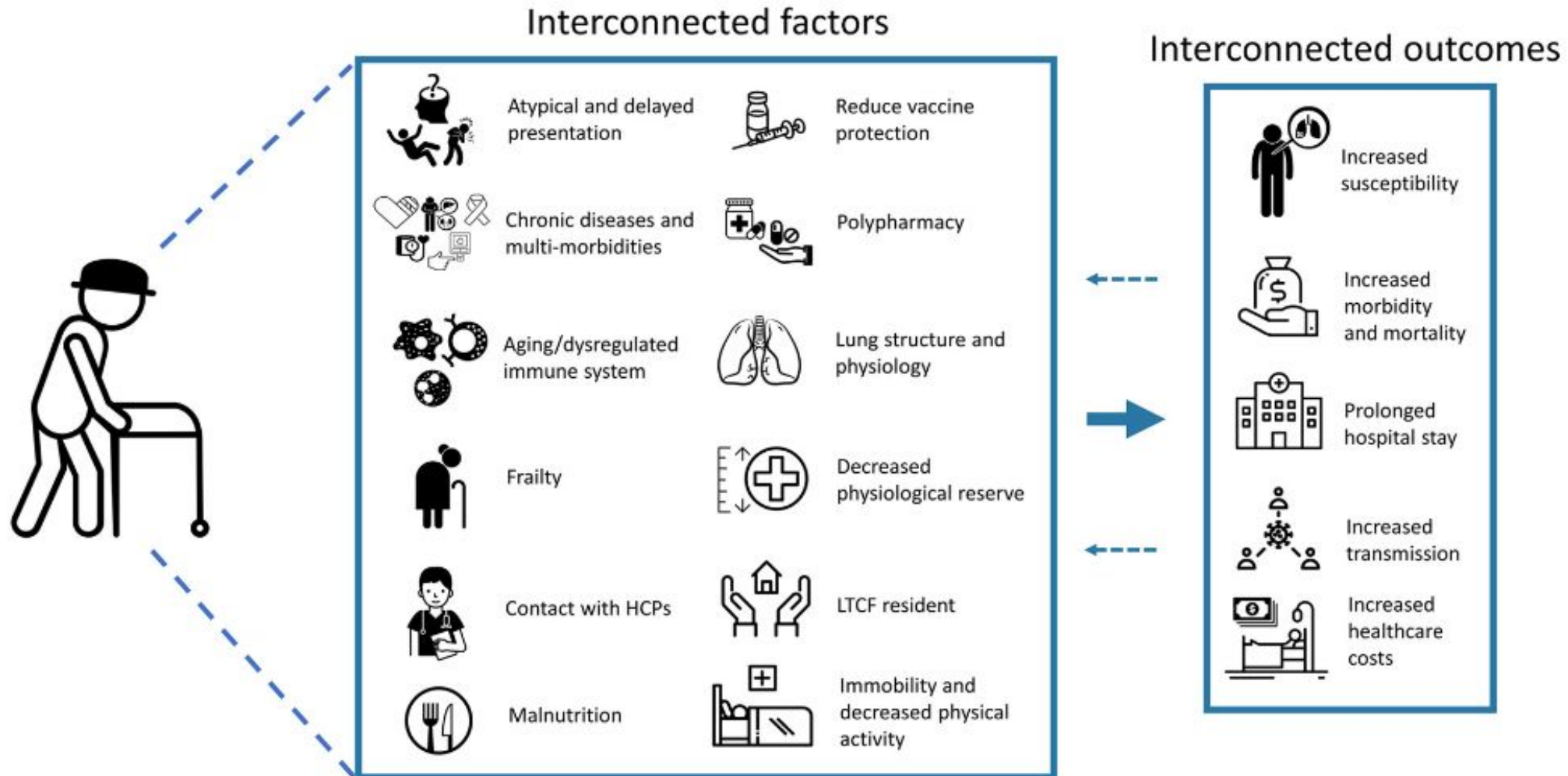
Altered immune system in frailty

O. Pansarasa, et al.

Ageing Research Reviews 54 (2019) 100935



Interconnected factors that drive an increased susceptibility and impact of respiratory viral infections



July

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Frailty Hinders Recovery From Influenza and Acute Respiratory Illness in Older Adults

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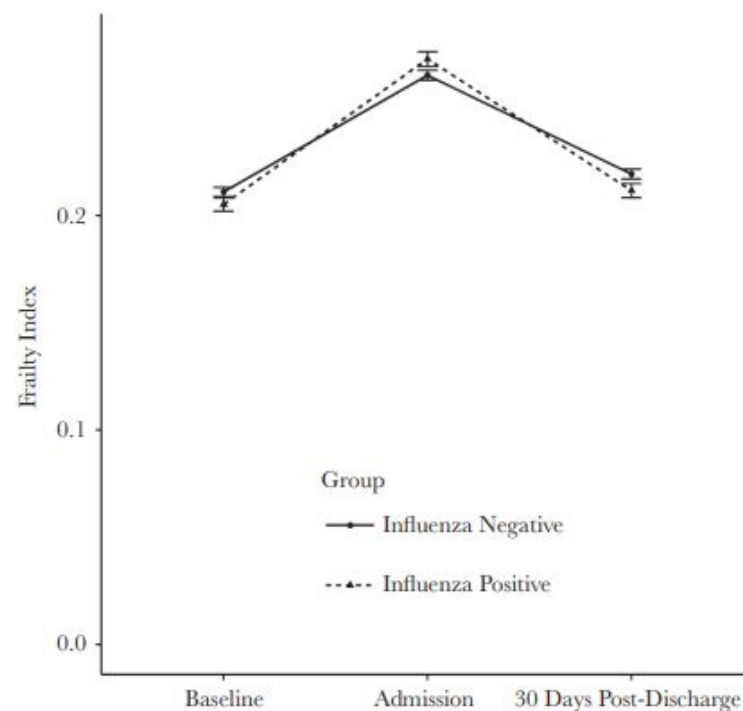


Figure 2. Mean ($\pm$ standard error) frailty index levels for influenza-positive and -negative participants. N = 4467 (alive at 30 days postdischarge and a computed frailty index for all 3 time points).

- 5,011 patients aged ≥ 65 years admitted to Canadian Serious Outcomes Surveillance Network hospitals during the 2011/2012, 2012/2013, and 2013/2014 influenza seasons.

- Frailty was consistently associated with lower odds of recovery across all three seasons.

- Increasing frailty is linked to lower odds of recovery, with persistent worsening frailty being a significant adverse outcome of acute illness.

April, 2025

Relationship Between Frailty and Human Metapneumovirus Infection in Hospitalized Older Adults

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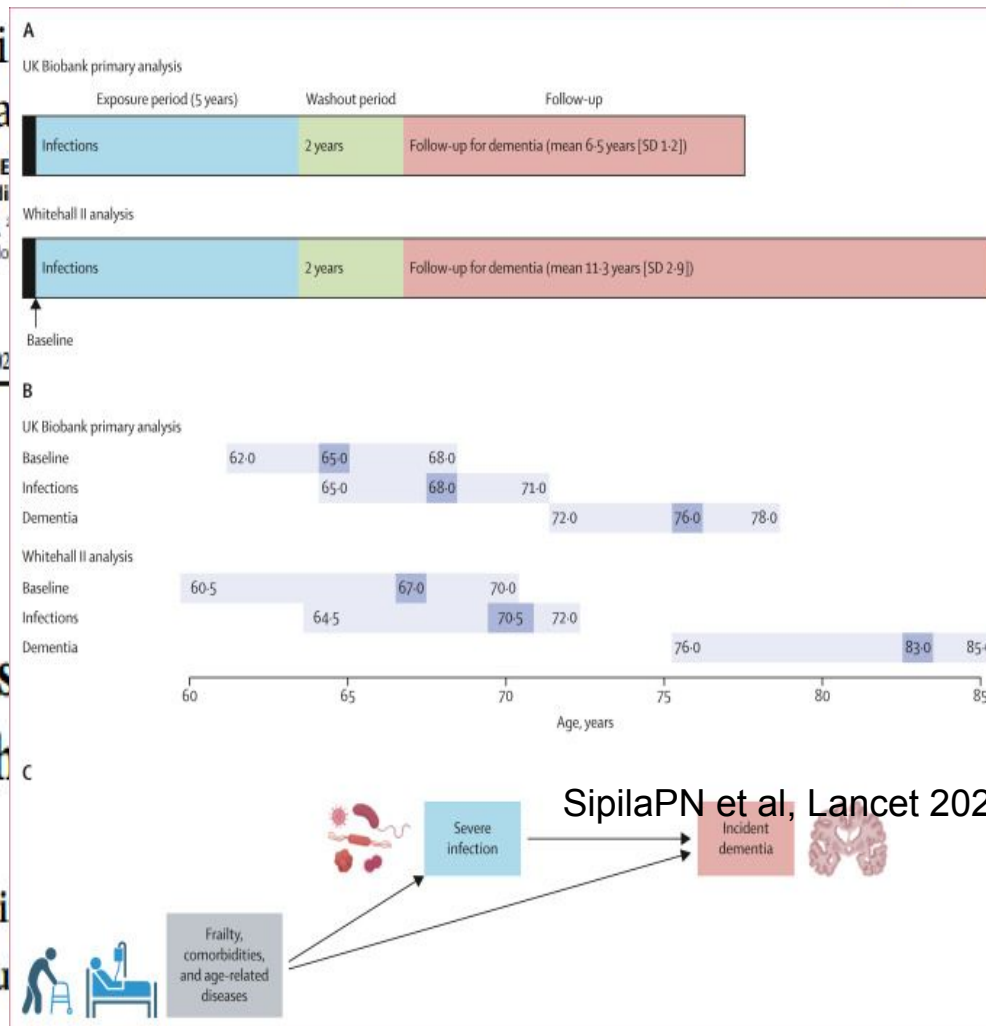
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Frailty as a risk factor for poor clinical outcomes among US veterans during the COVID-19 pandemic

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Metapneumovirus Epidemiology Among Hospitalized Middle-aged and Older Adults

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Human metapneumovirus (hMPV) significantly impacts young children, older adults, and those with preexisting conditions. This study examines frailty and clinical outcomes in middle-aged and older adults hospitalized due to hMPV infections. Data from the Canadian Immunization Research Network's Serious Outcomes Surveillance Network were analyzed. Adults aged ≥ 50 with lab-confirmed hMPV infection. Severe infection was marked by pneumonia, oxygen need, hospital admission, mechanical ventilation, or death within 30 days. The Frailty Index (FI) categorized individuals as nonfrail (FI < 0.08), prefrail (FI ≥ 0.08 , FI < 0.21), and frail (FI ≥ 0.21). Multivariate ridge regression identified factors linked to

severe disease among 212 patients (median age 76), 85.4% had severe disease and 61.3% were frail. Frail patients had higher rates of severe disease (85.4% vs. 63.4%), oxygen therapy need (80.8% vs. 63.4%), and longer hospital stays (median 8 vs. 4 days) than nonfrail. Any cardiac illness (odds ratio [OR], 1.76; 95% confidence interval [CI], 1.02–3.09), congestive heart failure (OR, 1.91; 95% CI, 1.12–3.09), chronic obstructive pulmonary disease (OR, 1.93; 95% CI, 1.14–3.35), and frailty (OR, 1.18–3.38) were significantly associated with increased odds of severe disease.

Frailty, assessable with standardized tools, is associated with severe hMPV infections in middle-aged and older adults. Frailty in clinical management and as a vaccination criterion is necessary as hMPV vaccines become available.

Registration. NCT01517191 (ClinicalTrials.gov).

Keywords: frailty; human metapneumovirus; older adult; respiratory tract infections.