two years immediately after PD diagnosis is high and warrants the initiation of early fall and fracture prevention strategies, in addition to aggressive treatment of PD symptoms by all providers caring for patients with PD.

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Positive SARS-CoV-2 symptomatology despite persistently negative molecular testing: Insights from a Multicenter Household Transmission Study

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OBJECTIVES/GOALS: We describe the prevalence of individuals with household exposure to SARS-CoV-2, who subsequently report symptoms consistent with COVID-19, while having PCR results persistently negative for SARS-CoV-2 (S[+]/P[-]). We assess whether paired serology can assist in identifying the true infection status of such individuals. METHODS/STUDY POPULATION: In a multicenter household transmission study, index patients with SARS-CoV-2 were identified and enrolled together with their household contacts within 1 week of index's illness onset. For 10 consecutive days, enrolled individuals provided daily symptom diaries and nasal specimens for polymerase chain reaction (PCR). Contacts were categorized into 4 groups based on presence of symptoms (S[+/-]) and PCR positivity (P[+/-]). Acute and convalescent blood specimens from these individuals (30 days apart) were subjected to quantitative serologic analysis for SARS-CoV-2 anti-nucleocapsid, spike, and receptor-binding domain antibodies. The antibody change in S[+]/P[-] individuals was assessed by thresholds derived from receiver operating characteristic (ROC) analysis of S[+]/P[+] (infected) versusS[-]/P[-] (uninfected). RESULTS/ANTICIPATED RESULTS: Among 1,433 contacts, 67% had ≥1 SARS-CoV-2 PCR[+] result, while 33% remained PCR[-]. Among the latter, 55% (n = 263) reported symptoms for at least 1 day, most commonly congestion (63%), fatigue (63%), headache (62%), cough (59%), and sore throat (50%). A history of both previous infection and vaccination was present in 37% of S[+]/P[-] individuals, 38% of S[-]/P[-], and 21% of S[+]/P[+] ($P<0.05$). Vaccination alone was present in 37%, 41%, and 52%, respectively. ROC analyses of paired serologic testing of S[+]/P[+] (n = 354) vs. S[-]/P[-] (n = 103) individuals found anti-nucleocapsid data had the highest area under the curve (0.87). Based on the 30-day antibody change, 6.9% of S[+]/P[-] individuals demonstrated an increased convalescent antibody signal, although a similar seroresponse in 7.8% of the S[-]/P[-] group was observed. DISCUSSION/SIGNIFICANCE OF IMPACT: Reporting respiratory symptoms was common among household contacts with persistent PCR[-] results. Paired serology analyses found similar seroresponses between S[+]/P[-] and S[-]/P[-] individuals. The symptomatic-but-PCR-negative phenomenon, while frequent, is unlikely attributable to true SARS-CoV-2 infections that go missed by PCR.

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Implementation of an analytic resource navigation process at an Academic Medical Center

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OBJECTIVES/GOALS: In 2018, a novel analytic resource navigation process was developed at Duke University to connect potential collaborators, leverage resources, and foster a community of quantitative researchers and scientists. We provide information about how this process works along with guidance for academic medical centers to develop similar initiatives. METHODS/STUDY POPULATION: Quantitative and qualitative scientists with expertise in data science, biostatistics, epidemiology, and related fields play a critical role in data collection, study design, analysis, interpretation, and implementation. The analytic resource navigation process connects researchers with quantitative scientists and relies on strong institutional knowledge of methodological expertise, understanding of research goals, educating researchers, and ongoing evaluation to understand unmet needs. University staff serve as navigators to help researchers identify the needed expertise, find potential collaborators, and track outcomes. Duke University's tracking system for this navigation process, implemented in 2019, underwent a nearly five-year evaluation (November 2019 – September 2024). RESULTS/ANTICIPATED RESULTS: In the nearly five-year evaluation of the process, 1247 requests from 813 unique researchers were navigated with a success rate of 93.8%. A total of 323 requests (256 unique researchers) were navigated in year 1, 285 requests (239 unique researchers) in year 2, 210 requests (179 unique researchers) in year 3, and 247 requests (192 unique researchers) in year 4. In the current year (partial year 5, 11/1/2023 – 9/18/2024), 182 requests have been navigated (159 unique researchers). Unsuccessful linkages occurred in 35 requests (2.8%) and 42 requests (3.4%) were withdrawn. Among the cases of unsuccessful navigation, 26 failed due to effort (e.g., insufficient effort available to meet the researcher's deadline), 2 failed due to lack of expertise at the institution, and 4 failed due to a lack of sufficient funding. DISCUSSION/SIGNIFICANCE OF IMPACT: The navigation process provides a critical resource for researchers who need to develop collaborations and a method for institutions to understand collaboration needs. Implementation requires training knowledgeable navigators, maintaining updated information about quantitative and qualitative methodologists, and institutional support.

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Single-cell comparative analysis reveals a similar regulatory subpopulation in white and brown adipocyte precursors

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OBJECTIVES/GOALS: The goal of this study is to resolve the complexity of the adipose precursor cells and identify potential therapeutic targets/mechanism to treat obesity, diabetes, cancer cachexia, and

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