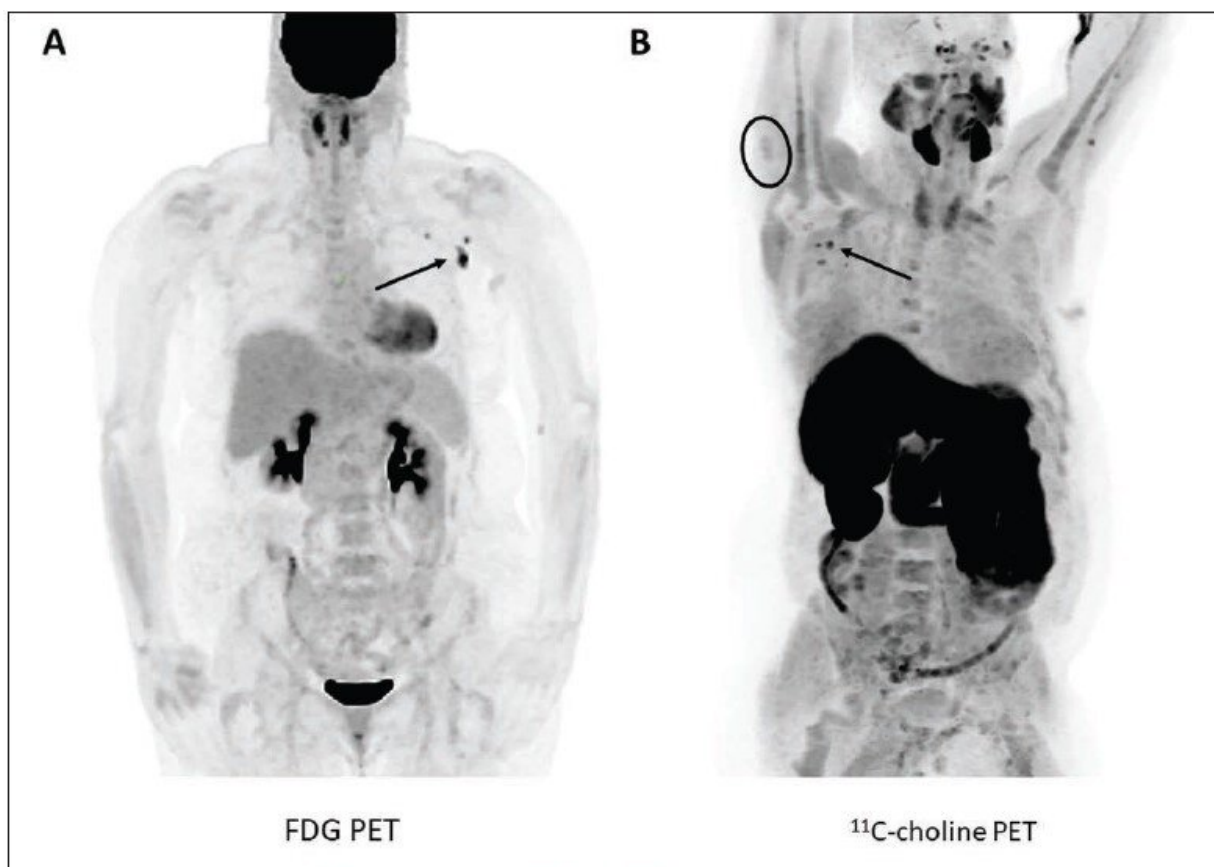


# Nodal and deltoid radiotracer uptake on post-COVID-19 vaccination PET

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(A) 57-year-old woman with right upper arm melanoma who received the first dose of the COVID-19 vaccine (Pfizer-BioNTech) in the left deltoid 15 days prior to FDG PET/CT. FDG uptake is observed within left axillary lymph nodes (arrow, SUVmax = 9.3). (B) 62-year-old man with metastatic prostate carcinoma who received the second dose of COVID-19 vaccine (Pfizer-BioNTech) in the right deltoid 7 days prior to <sup>11</sup>C-choline PET/CT. <sup>11</sup>C-choline uptake is observed within right axillary lymph nodes (arrows, SUVmax = 3.1) as well as

the right deltoid muscle (circle, SUVmax = 1.7). Credit: American Roentgen Ray Society (ARRS), *American Journal of Roentgenology* (AJR)

According to an open-access article in ARRS' *American Journal of Roentgenology* (AJR), increased axillary lymph node or ipsilateral deltoid uptake is occasionally observed on FDG or 11C-choline PET performed after Pfizer-BioNTech or Moderna COVID-19 vaccination.

"Recognition of occasional abnormal axillary lymph node or deltoid uptake on PET examinations performed after COVID-19 vaccination will aid interpreting physicians and reduce unnecessary biopsies," wrote corresponding author Jason R. Young from the department of radiology at Mayo Clinic in Rochester, MN.

Young and colleagues' retrospective study included 67 [patients](#) (43 men, 24 women; mean age, 75.6 years) who underwent PET examination (PET/CT in 66, PET/MRI in 1; FDG in 54, 11C-choline in 13) between December 14, 2020 and March 10, 2021 following COVID-19 vaccination (Pfizer-BioNTech [vaccine](#) in 52, Moderna vaccine in 15) and who had undergone pre-vaccination PET without visible axillary node uptake. PET was performed a median of 13 and 10 days after vaccination in patients who had received one (n = 44) and two (n = 23) doses, respectively.

"We observed positive axillary lymph nodes in 7.4% of FDG and 23.1% of 11C-choline PET examinations performed after COVID-19 vaccination (10.4% of PET examinations) in patients without visible axillary nodal uptake on PET performed before vaccination," Young et al. concluded. Ipsilateral deltoid uptake with a characteristic appearance was observed in 14.5% of examinations, and one patient exhibited extraaxillary lymph node uptake (ipsilateral supraclavicular uptake on

FDG PET).

"All examinations showing positive axillary lymph nodes were performed within 24 days of vaccination," the authors of this AJR article added.

**More information:** Dane G. Schroeder et al. Frequency and Characteristics of Nodal and Deltoid FDG and 11C-Choline Uptake on PET Imaging Performed After COVID-19 Vaccination. *American Journal of Roentgenology*. DOI: [10.2214/AJR.21.25928](https://doi.org/10.2214/AJR.21.25928)

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