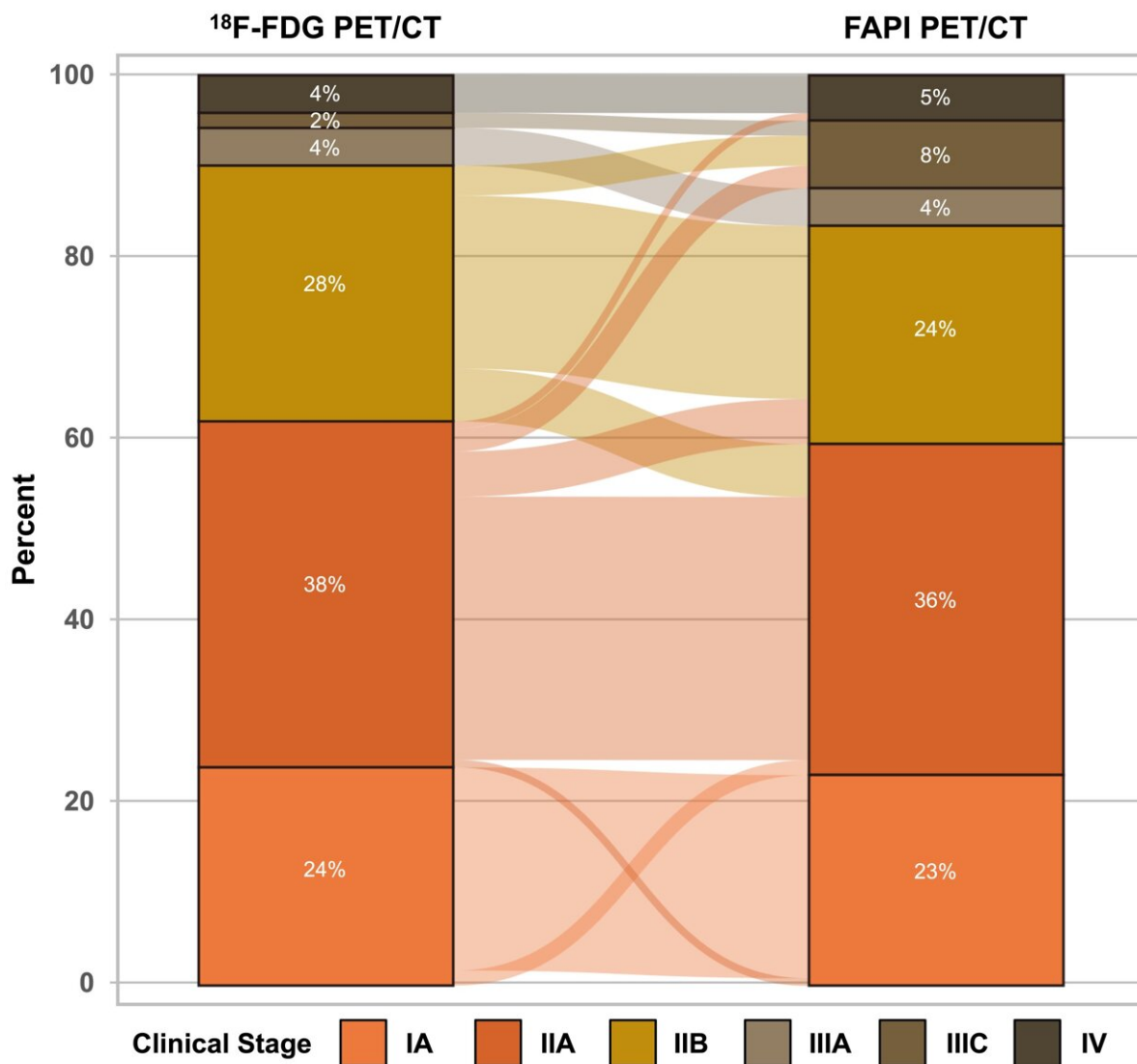


# Comparative analysis shows FAPI PET/CT improves staging of newly diagnosed breast cancer

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Clinical stage changed by FAPI PET/CT categorized by  $^{18}\text{F}$ -FDG PET/CT in newly diagnosed breast cancer. Credit: Hao Z et al., Peking Union Medical College Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China.

A comparative analysis between FAPI and  $^{18}\text{F}$ -FDG PET/CT for the systemic staging of newly diagnosed breast cancer shows that FAPI PET/CT is more accurate in staging patients. Nearly 20 percent of patients were restaged by FAPI PET/CT, indicating the radiotracer's efficacies and benefits for clinical practice. This research was presented at the [2024 Society of Nuclear Medicine and Molecular Imaging Annual Meeting](#).

$^{18}\text{F}$ -FDG PET/CT, while commonly used in [breast cancer](#) staging, has limitations, such as [false positives](#) in inflammatory breast lesions and reduced sensitivity in specific breast cancer subtypes. Previous small-sample retrospective studies suggest that  $^{68}\text{Ga}$ -FAPI might outperform  $^{18}\text{F}$ -FDG PET/CT with its high sensitivity in the detection of primary tumors and metastases among breast cancer patients.

"There is currently a lack of evidence on the efficacy of FAPI PET/CT, especially in large sample cohorts," said Zhixin Hao, MD, a nuclear medicine physician at Peking Union Medical College Hospital in Beijing, China. "Our study sought to add to the literature by assessing FAPI PET/CT for the systemic staging of newly diagnosed breast cancer compared with  $^{18}\text{F}$ -FDG PET/CT."

A total of 121 patients newly diagnosed with breast cancer were included in the study. All patients underwent  $^{18}\text{F}$ -FDG imaging. In addition, 53 patients were imaged with  $^{68}\text{Ga}$ -FAPI-04 PET/CT and 68 patients were imaged with A1  $^{18}\text{F}$ -FAPI-04 PET/CT. Data was analyzed and lesions

were recorded as positive if their uptake exceeded that of the adjacent background tissue. The TNM [clinical stage](#) was determined from  $^{18}\text{F}$ -FDG and FAPI PET/CT, according to the American Joint Committee on Cancer Staging Manual.

Compared to the clinical TNM stage determined by  $^{18}\text{F}$ -FDG PET/CT, FAPI re-staged 19.8 percent of patients. Management plans were optimized in six patients due to the additional detection of bone lesions and internal mammary lymph nodes.

Of note, FAPI PET/CT upstaged 21.7 percent of stage IIA patients by  $^{18}\text{F}$ -FDG PET/CT. According to Hao, patients with stage IIA BC should be considered for systemic staging with FAPI PET/CT at the time of initial diagnosis.

"This study is significant as it has the potential to advance personalized treatment strategies for breast cancer patients," noted Hao. "FAPI PET/CT for the initial staging of breast cancer has the potential to reduce unnecessary treatments and improve patient outcomes."

**More information:** [Abstract 242411](#): Hao et al. FAPI Versus  $^{18}\text{F}$ -FDG PET/CT for Systemic Staging of Newly Diagnosed Breast Cancer, *Journal of Nuclear Medicine* (2024).

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