

<b>Characteristic</b>	<b>Mean [IQR]</b>	<b>N (%)</b>
<b>Gender</b>		
Male		5 (45)
Female		6 (55)
<b>Age (years)</b>	44 [34-54]	
<b>Indication for PET/CT</b>		
Sarcoma (SFT)		2 (18)
Ovarian carcinoma		1 (9)
Pleomorphic sarcoma		1 (9)
Sarcoma		1 (9)
Colorectal carcinoma		1 (9)
Breast carcinoma		1 (9)
Prostate carcinoma		1 (9)
Lung carcinoma		1 (9)
Urothelial carcinoma		1 (9)
Myxofibrosarcoma		1 (9)
<b>Type of mRNA vaccine</b>		
BNT162b2		10 (91)
mRNA1273		1 (9)
<b>Time between vaccine and PET/CT (days)</b>		
	19 [8-30]	
<b>Concomitant tumor therapy at PET</b>		
None		6 (55)
Radionuclide		1 (9)
Chemo		2 (18)
Immune		3 (27)

**Supplemental Table 1.** Patient Characteristics (n=11)

<b>Characteristic</b>	<b>N (%)</b>
<b>Indication</b>	
Staging	3 (27)
Restaging	8 (73)
<b>Extent</b>	
No disease	0 (0)
Primary tumor only	3 (27)
Locoregional disease only	1 (9)
Distant metastatic:	
nodal	3 (27)
bone	1 (9)
organ	5 (45)

**Supplemental Table 2.** Tumor stage by combined <sup>18</sup>F-FDG and <sup>68</sup>Ga-FAPI PET/CT in 11 patients

Patient No.	Tumor			Injection site		Axillary & Adjacent Nodes						Distant Nodes, Spleen, BM	
	Entity	SUVpeak		<sup>18</sup> F-FDG	<sup>68</sup> Ga-FAPI	<sup>18</sup> F-FDG			<sup>68</sup> Ga-FAPI			<sup>18</sup> F-FDG	<sup>68</sup> Ga-FAPI
		<sup>18</sup> F-FDG	<sup>68</sup> Ga-FAPI			visual	N	SUVpeak	visual	N	SUVpeak		
1	Ovarian	4.1	4.7	positive	negative	positive	12	2.2	negative	0	0.7	negative	negative
2	Sarcoma (SFT)	3.3	11.7	positive	negative	positive	4	2.1	negative	0	0.7	negative	negative
3	Pleomorphic sarcoma	3.9	1.8	positive	negative	positive	12	4.8	negative	0	0.5	positive*	negative
4	Sarcoma	1.0	2.5	positive	negative	positive	2	2.7	negative	0	0.7	negative	negative
5	Colorectal	3.8	6.0	positive	negative	positive	12	9.1	negative	0	1.5	negative	negative
6	Sarcoma (SFT)	4.4	8.1	positive	negative	positive	8	6.6	negative	0	1.1	negative	negative
7	Breast	2.1	4.0	positive	negative	positive	1	1.5	negative	0	0.9	negative	negative
8	Prostate	10.1	12.0	positive	negative	positive	2	2.9	negative	0	0.4	negative	negative
9	Lung	20.2	18.8	positive	negative	positive	5	1.9	negative	0	0.9	negative	negative
10	Urothelial	7.1	5.3	positive	negative	positive	12	3.4	negative	0	0.9	negative	negative
11	Myxofibrosarcoma	4.4	4.0	positive	negative	positive	4	1.6	negative	0	0.7	negative	negative
<b>Sum (%) or Median [IQR]</b>	-	4.1 [0-9.4]	5.3 [0.2-10.4]	11 (100%)	0 (0%)	11 (100%)	74	2.7 [1.1-5.9]	0 (0%)	0	0.7 [0.4-1.0]	1 (9%)	0 (0%)

### Supplemental Table 3. Non-tumor specific uptake

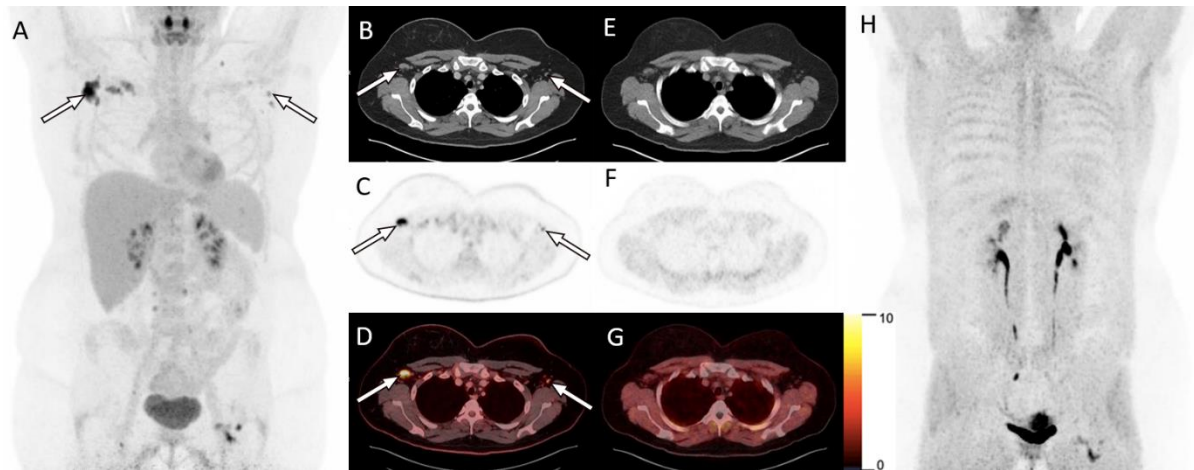
\*Diffuse bone marrow uptake - SUVpeak 3.4

	<b>overall detection N</b>	<b><sup>18</sup>F-FDG N (%)</b>	<b><sup>68</sup>Ga-FAPI N (%)</b>
Patient level detection of tumor	11	11 (100)	11 (100)
Total N of detected tumor lesions	102	74 (73)	96 (94)
Primary lesion	6	6 (100)	6 (100)
Local nodal	26	20 (77)	21 (81)
Distant nodal	10	8 (80)	10 (100)
Lung	7	5 (71)	7 (100)
Liver	18	9 (50)	17 (94)
Bone	28	23 (82)	28 (100)
Other	7	3 (43)	7 (100)

**Supplemental Table 4.** Tumor detection efficacy for <sup>18</sup>F-FDG vs. <sup>68</sup>Ga-FAPI PET/CT (n=11 patients)

## Supplemental Figure 1-11. $^{18}\text{F}$ -FDG PET/CT and $^{68}\text{Ga}$ -FAPI PET/CT images in all 11 patients

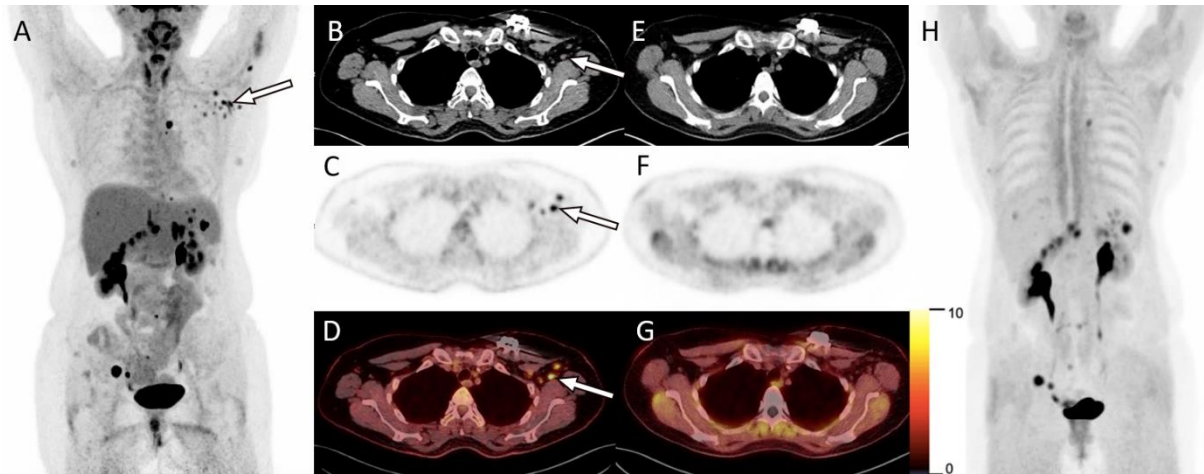
$^{18}\text{F}$ -FDG (A-D) and  $^{68}\text{Ga}$ -FAPI (E-H) Maximum intensity projection images (MIP) of the PET/CT scan (A, H), axial CT (B, E), PET (C, F), PET/CT (D, G) are shown.



### Supplemental Figure 1. Patient 1, female, 32 y

Tumor stage: Colorectal cancer, R0 resection with locoregional and distant metastases.

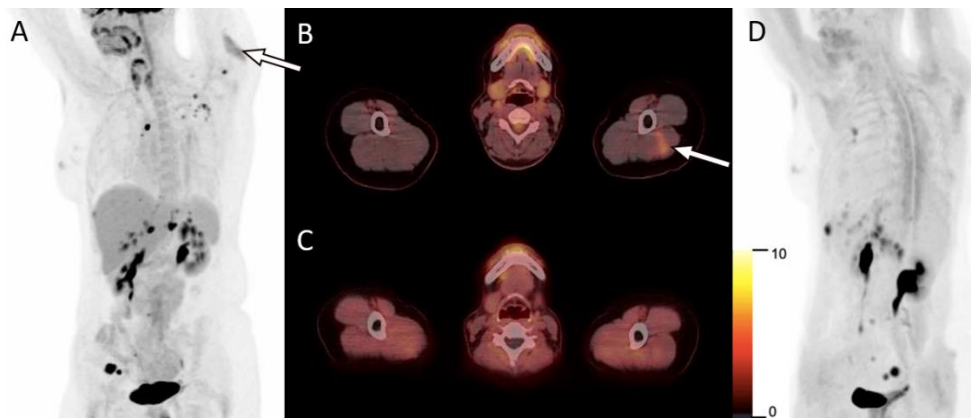
PET uptake in the vaccination region:  $^{18}\text{F}$ -FDG positive (n=12 lymph nodes, arrow) vs.  $^{68}\text{Ga}$ -FAPI negative (bilateral findings after vaccination on right side followed by a biopsy confirming reactive lymphoid hyperplasia)



**Supplemental Figure 2.1.** Patient 2, female, 49 y

Tumor stage: Ovarian cancer, R0 resection with locoregional and distant metastases.

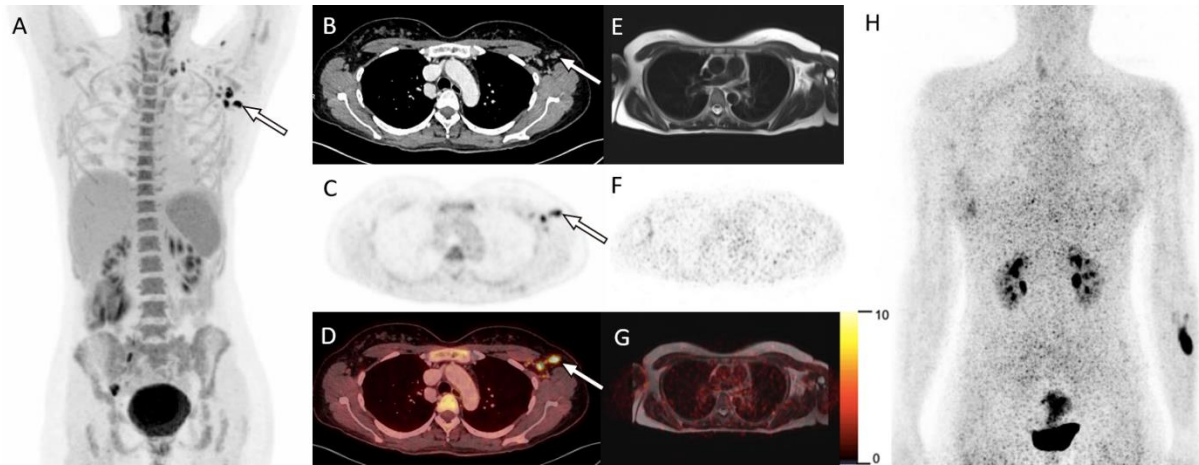
PET uptake in the vaccination region:  $^{18}\text{F}$ -FDG positive (n=12 lymph nodes, arrow) vs.  $^{68}\text{Ga}$ -FAPI negative



**Supplemental Figure 2.2.**

Same patient showing additional deltoid muscle uptake on  $^{18}\text{F}$ -FDG<sup>18</sup> ( $\text{SUV}_{\text{peak}}$  2.3, arrow).

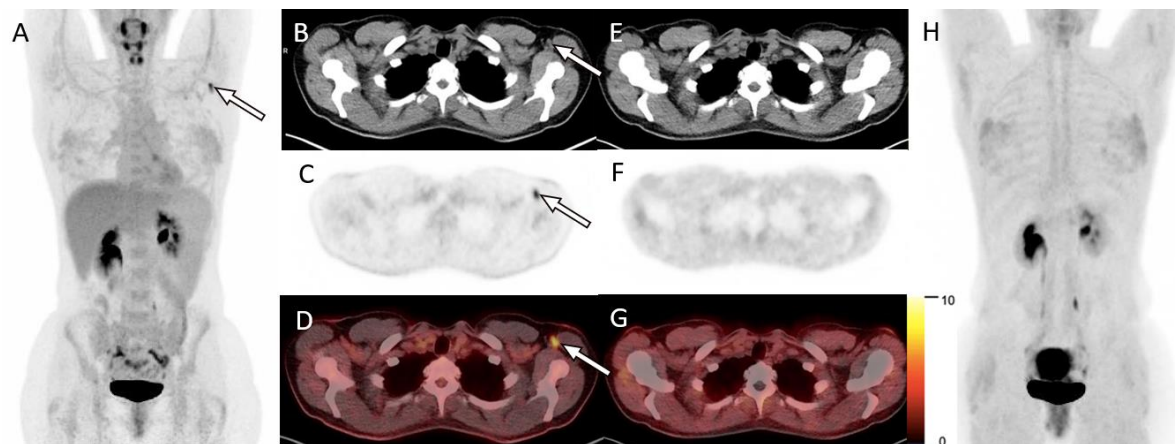
$^{18}\text{F}$ -FDG (A, B) and  $^{68}\text{Ga}$ -FAPI (C, D), MIP (A, D), PET/CT (B, C)



**Supplemental Figure 3.** Patient 3, female, 42 y

Tumor stage: Undifferentiated pleomorphic sarcoma (UPS), primary lesion with one locoregional metastasis.

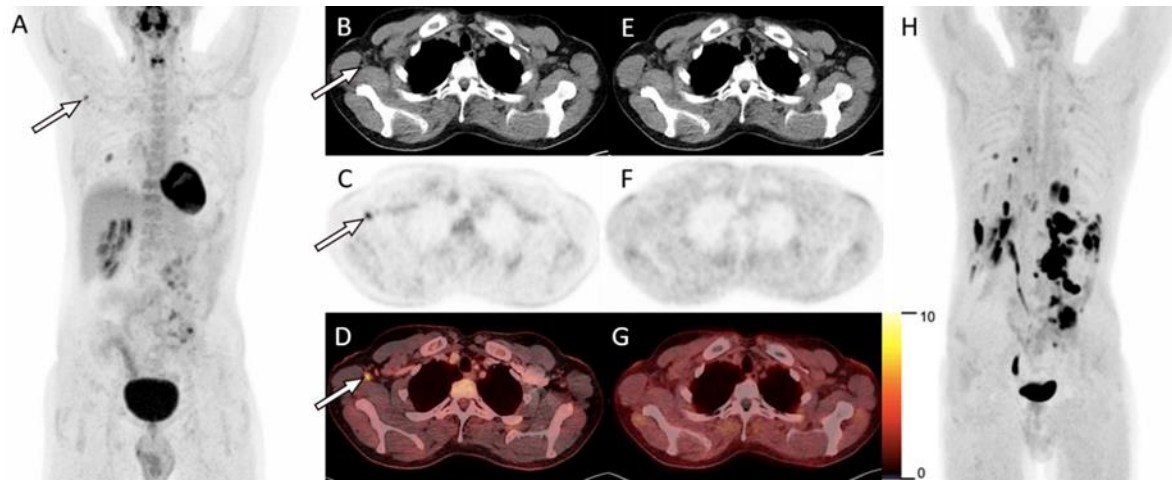
PET uptake in the vaccination region:  $^{18}\text{F}$ -FDG positive (n=11 lymph nodes, arrow) vs.  $^{68}\text{Ga}$ -FAPI negative



**Supplemental Figure 4.** Patient 4, female, 39 y

Tumor stage: Low grade myxoid liposarcoma, primary lesion with no metastases.

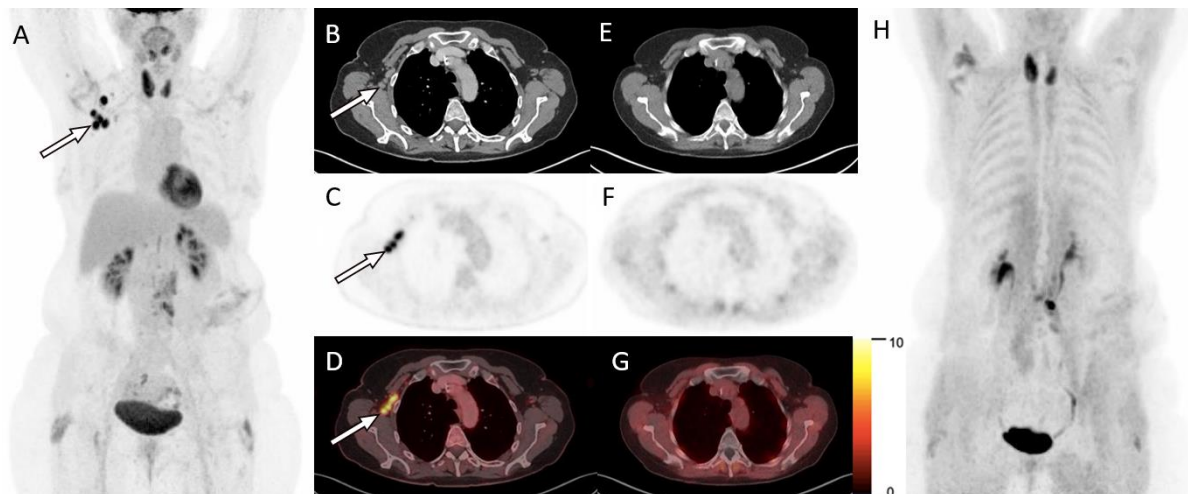
PET uptake in the vaccination region:  $^{18}\text{F}$ -FDG positive (n=2 lymph nodes, arrow) vs.  $^{68}\text{Ga}$ -FAPI negative



**Supplemental Figure 5.** Patient 5, male, 36 y

Tumor stage: Solitary fibrous tumor, R0 resection with locoregional and distant metastases.

PET uptake in the vaccination region:  $^{18}\text{F}$ -FDG positive (n=4 lymph nodes, arrow) vs.  $^{68}\text{Ga}$ -FAPI negative

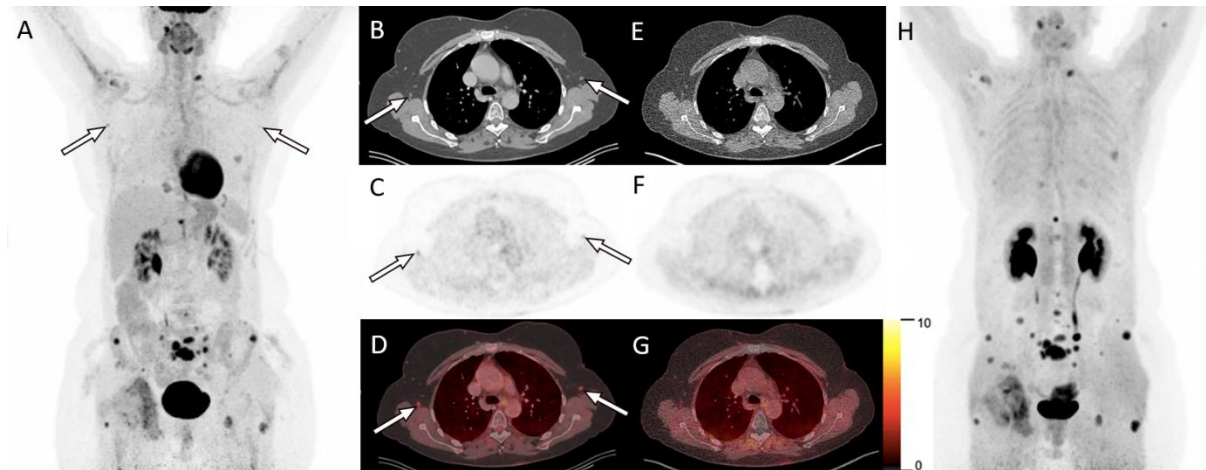


**Supplemental Figure 6.** Patient 6, female, 57 y

Tumor stage: Solitary fibrous tumor, primary lesion with no metastases.



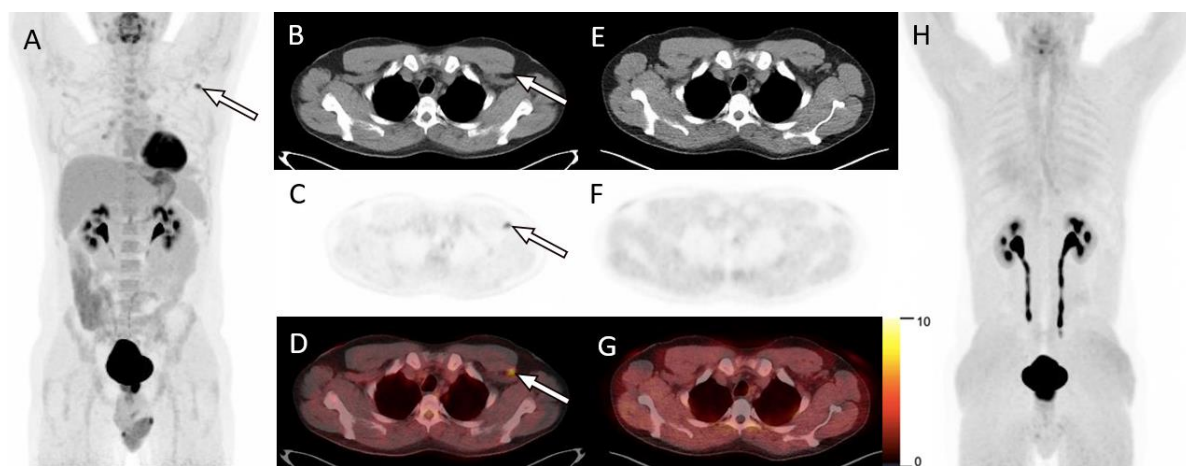
PET uptake in the vaccination region:  $^{18}\text{F}$ -FDG positive (n=8 lymph nodes, arrow) vs.  $^{68}\text{Ga}$ -FAPI negative



**Supplemental Figure 7.** Patient 7, female, 44 y

Tumor stage: Breast cancer, prior lumpectomy, bone metastases.

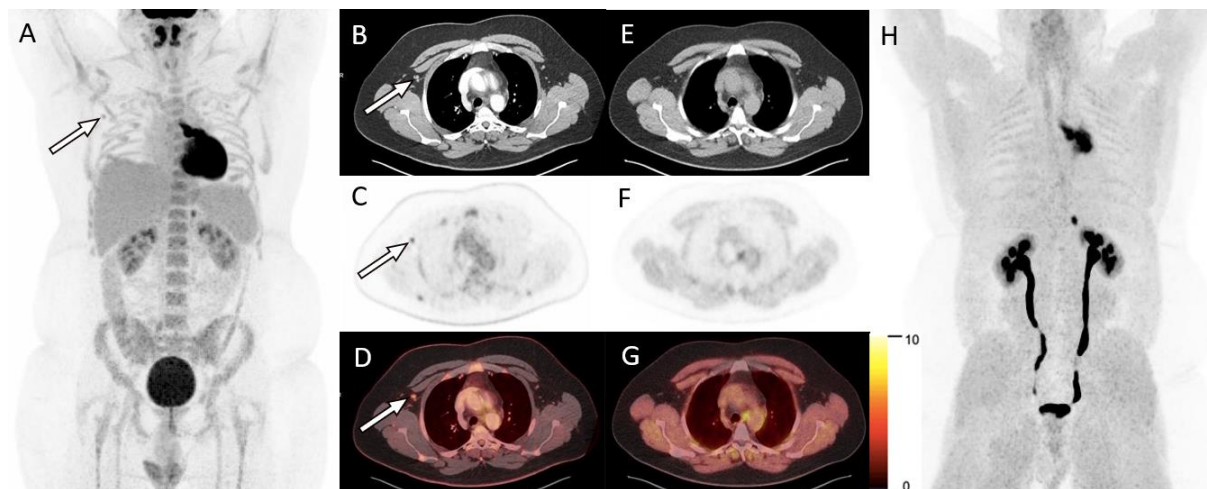
PET uptake in the vaccination region:  $^{18}\text{F}$ -FDG positive (n=2 lymph nodes, arrow) vs.  $^{68}\text{Ga}$ -FAPI negative



**Supplemental Figure 8.** Patient 8, male, 47 y

Tumor stage: Prostate cancer, primary lesion with no metastases.

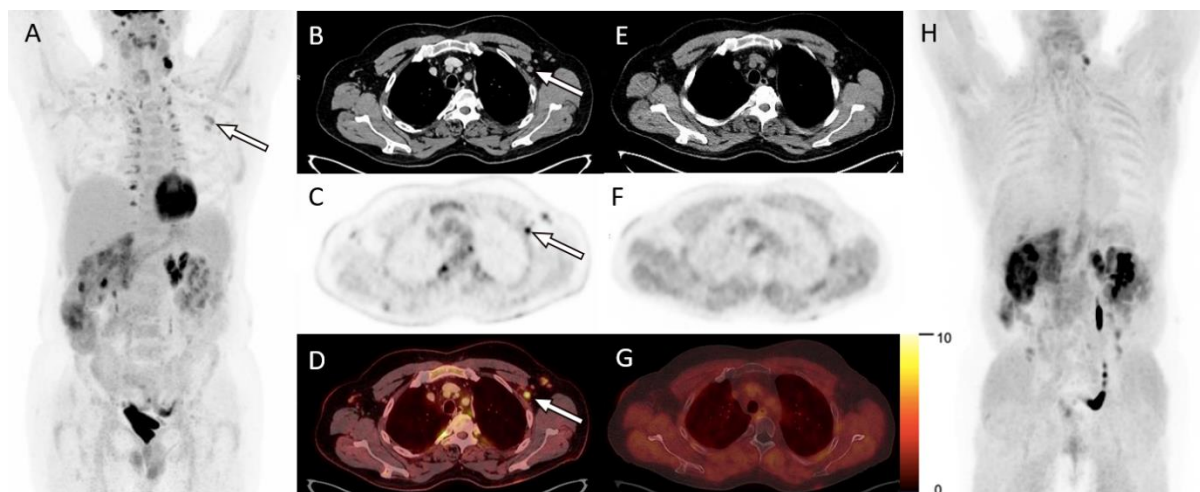
PET uptake in the vaccination region:  $^{18}\text{F}$ -FDG positive (n=2 lymph nodes, arrow) vs.  $^{68}\text{Ga}$ -FAPI negative



**Supplemental Figure 9.** Patient 9, male, 39 y

Tumor stage: Lung cancer, primary lesions with one distant metastasis.

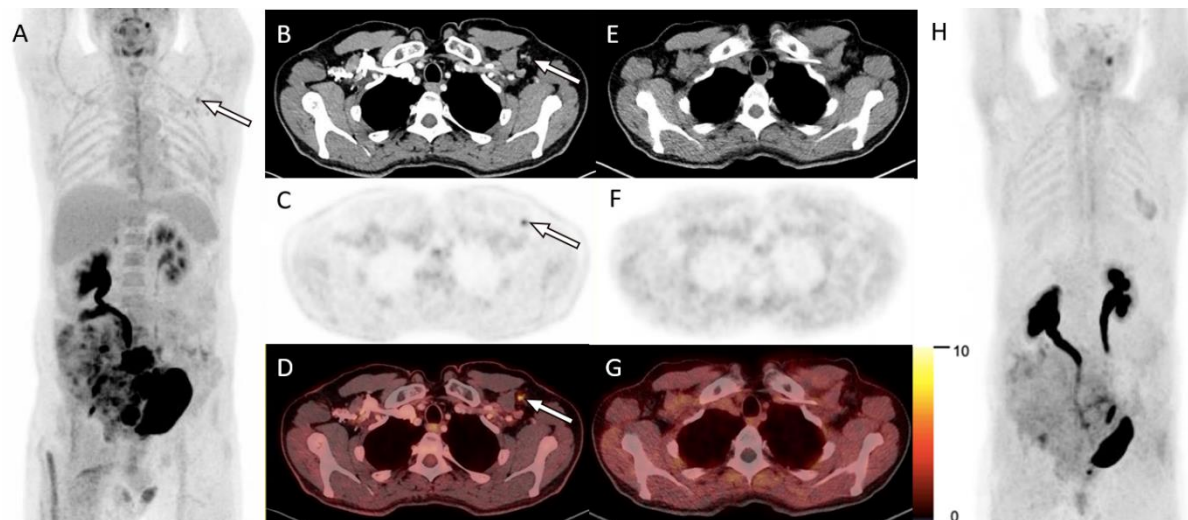
PET uptake in the vaccination region:  $^{18}\text{F}$ -FDG positive (n=5 lymph nodes, arrow) vs.  $^{68}\text{Ga}$ -FAPI negative



**Supplemental Figure 10.** Patient 10, male, 47 y

Tumor stage: Urothelial cancer, primary lesion with locoregional and distant metastases.

PET uptake in the vaccination region:  $^{18}\text{F}$ -FDG positive (n=12 lymph nodes, arrow) vs.  $^{68}\text{Ga}$ -FAPI negative



**Supplemental Figure 11.** Patient 11, male, 62 y

Tumor stage: Myxofibrosarcoma, primary lesion, left gynecomastia with no metastases.

PET uptake in the vaccination region:  $^{18}\text{F}$ -FDG positive (n=4 lymph nodes, arrow) vs.  $^{68}\text{Ga}$ -FAPI negative