

Supplemental Data

Quantitative Comparison of Prone and Supine PERCIST Measurements in Breast Cancer

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Supplemental Table 1: Individual patient and tumor characteristics at baseline, as well as chemotherapy regimens received and pathological response.

Study ID	Clinical stage	Size (cm)	Receptor Status	NAC Agent #1	NAC Agent #2	NAC Agent #3	NAC Agent #4	PATH RESPONSE
1	IIIC	5.4	Triple Negative	Paclitaxel (Taxol)	Cisplatin (Platinol)	Everolimus (RAD-001/Placebo)		NR
2	IIB	7.1	Triple Negative	Paclitaxel (Taxol)	Doxorubicin (Adriamycin)	Cyclophosphamide (Cytoxan)		pCR
3	IIIA	6.4	Triple Negative	Cyclophosphamide (Cytoxan)	Doxorubicin (Adriamycin)	Paclitaxel (Taxol)		NR
4	IIIB	4.9	ER (+), PR (+), HER2 (+)	Docetaxel (Taxotere)	Trastuzumab (Herceptin)	Carboplatin (Paraplatin)		NR
5	IIIA	10	ER (+), PR (+)	Doxorubicin (Adriamycin)	Cyclophosphamide (Cytoxan)	Paclitaxel (Taxol)		NR
6	IV	9	ER (+), PR (+)	Letrozole (Femara)	Other	Other	Paclitaxel (Taxol)	No Surgery
7	IIIA	4.8	ER (+), PR (+), HER2 (+)	Docetaxel (Taxotere)	Carboplatin (Paraplatin)	Trastuzumab (Herceptin)		NR
8	IIIA	6.4	Triple Negative	Paclitaxel (Taxol)	Cisplatin (Platinol)	Everolimus (RAD-001/Placebo)		No Surgery
9	IIB	4.5	HER2 (+)*	Docetaxel (Taxotere)	Carboplatin (Paraplatin)	Trastuzumab (Herceptin)		NR
10	IIIA	3.1	HER2 (+)*	Paclitaxel (Taxol)	Trastuzumab (Herceptin)	Doxorubicin (Adriamycin)	Cyclophosphamide (Cytoxan)	NR
11	IIIC	5	Triple Negative	Doxorubicin (Adriamycin)	Cyclophosphamide (Cytoxan)	Paclitaxel (Taxol)		pCR
12	IIA	1.9	Triple Negative	Doxorubicin (Adriamycin)	Paclitaxel (Taxol)	Cyclophosphamide (Cytoxan)		pCR
13	IIIA	4.3	ER (+), PR (+)	Doxorubicin (Adriamycin)	Cyclophosphamide (Cytoxan)	Paclitaxel (Taxol)		NR
14	IIIA	5.9	Triple Negative	Doxorubicin (Adriamycin)	Cyclophosphamide (Cytoxan)	Paclitaxel (Taxol)		No Surgery
15	IIB	2.4	Triple Negative	Cisplatin (Platinol)	Paclitaxel (Taxol)	Everolimus (RAD-001/Placebo)		NR
16	I	1.9	Triple Negative	Cisplatin (Platinol)	Paclitaxel (Taxol)	Everolimus (RAD-001/Placebo)		pCR
17	IIIA	10	HER2 (+)*	Docetaxel (Taxotere)	Carboplatin (Paraplatin)	Trastuzumab (Herceptin)		pCR
18	IIIA	9	Triple Negative	Cisplatin (Platinol)	Paclitaxel (Taxol)	Everolimus (RAD-001/Placebo)		NR
19	IIB	2.8	PR (+)	Doxorubicin (Adriamycin)	Cyclophosphamide (Cytoxan)	Paclitaxel (Taxol)		pCR
20	IIB	2	Triple Negative	Cisplatin (Platinol)	Paclitaxel (Taxol)	Everolimus (RAD-001/Placebo)		pCR
21	IIB	3.9	ER (+), PR (+)	Doxorubicin (Adriamycin)	Cyclophosphamide (Cytoxan)	Paclitaxel (Taxol)		NR
22	IIIA	5	ER (+), PR (+)	Doxorubicin (Adriamycin)	Cyclophosphamide (Cytoxan)	Paclitaxel (Taxol)		NR
23	IIIB	4.6	ER (+), HER2+	Paclitaxel (Taxol)	Trastuzumab (Herceptin)			pCR

Supplemental Table 1: Individual patient and tumor characteristics at baseline, as well as chemotherapy regimens received and pathological response.

Study ID	Clinical stage	Size (cm)	Receptor Status	NAC Agent #1	NAC Agent #2	NAC Agent #3	NAC Agent #4	PATH RESPONSE
24	IIIA	6.3	ER (+), PR (+)	Doxorubicin (Adriamycin)	Cyclophosphamide (Cytoxan)	Paclitaxel (Taxol)		NR
25	IIA	3	ER (+), PR (+), HER2 (+)	Doxorubicin (Adriamycin)	Docetaxel (Taxotere)	Cyclophosphamide (Cytoxan)	Trastuzumab (Herceptin)	pCR
26	IIB	3	Triple Negative	Doxorubicin (Adriamycin)	Cyclophosphamide (Cytoxan)	Docetaxel (Taxotere)		NR
27	IIA	2.4	HER2 (+)*	Trastuzumab (Herceptin)	Lapatinib			NR
28	IIA	5	HER2 (+)*	Trastuzumab (Herceptin)	Lapatinib			pCR
29	IIA	3	HER2 (+)*	Doxorubicin (Adriamycin)	Paclitaxel (Taxol)	Trastuzumab (Herceptin)	Cyclophosphamide (Cytoxan)	NR
30	IIA	4.5	ER (+), HER2+	Trastuzumab (Herceptin)	Lapatinib			NR
31	IIB	2.8	ER (+), HER2+	Trastuzumab (Herceptin)	Letrozole (Femara)	Lapatinib	Other	NR
32	IIB	6.6	ER (+)	Doxorubicin (Adriamycin)	Cyclophosphamide (Cytoxan)	Paclitaxel (Taxol)		NR
33	I	2.5	ER (+), HER2+	Trastuzumab (Herceptin)	Lapatinib			NR
34	IIA	1	Triple Negative	Cisplatin (Platinol)	Paclitaxel (Taxol)			pCR
35	IIIA	4	HER2 (+)*	Trastuzumab (Herceptin)	Lapatinib	Docetaxel (Taxotere)	Carboplatin (Paraplatin)	NR
36	IIA	4.5	HER2 (+)*	Lapatinib	Trastuzumab (Herceptin)	Other	Paclitaxel (Taxol)	NR
37	IIB	3.5	HER2 (+)*	Lapatinib	Trastuzumab (Herceptin)	Docetaxel (Taxotere)	Other	pCR
38	IIA	5	Triple Negative	Cyclophosphamide (Cytoxan)	Doxorubicin (Adriamycin)	Paclitaxel (Taxol)		NR
39	I	1.6	ER (+), PR (+), HER2 (+)	Carboplatin (Paraplatin)	Docetaxel (Taxotere)	Trastuzumab (Herceptin)	Other	pCR
40	IIB	4.1	ER (+), PR (+)	Cyclophosphamide (Cytoxan)	Doxorubicin (Adriamycin)	Paclitaxel (Taxol)		NR
41	I	1.3	ER (+)	Cyclophosphamide (Cytoxan)	Doxorubicin (Adriamycin)	Paclitaxel (Taxol)		pCR
42	IIIA	12	HER2 (+)*	Paclitaxel (Taxol)	Trastuzumab (Herceptin)	Other	Cyclophosphamide (Cytoxan)	NR
43	IIA	2.8	Triple Negative	Cisplatin (Platinol)	Paclitaxel (Taxol)	Cyclophosphamide (Cytoxan)	Doxorubicin (Adriamycin)	NR
44	IIIA	9	HER2 (+)*	Trastuzumab (Herceptin)	Other	Carboplatin (Paraplatin)	Docetaxel (Taxotere)	pCR
45	IIB	5.5	Triple Negative	Paclitaxel (Taxol)	Cyclophosphamide (Cytoxan)	Doxorubicin (Adriamycin)		pCR
46	IIB	13	Triple Negative	Cyclophosphamide (Cytoxan)	Doxorubicin (Adriamycin)	Carboplatin (Paraplatin)	Paclitaxel (Taxol)	pCR

Supplemental Table 1: Individual patient and tumor characteristics at baseline, as well as chemotherapy regimens received and pathological response.

Study ID	Clinical stage	Size (cm)	Receptor Status	NAC Agent #1	NAC Agent #2	NAC Agent #3	NAC Agent #4	PATH RESPONSE
47	I	2	HER2 (+)*	Trastuzumab (Herceptin)	Other	Docetaxel (Taxotere)	Carboplatin (Paraplatin)	pCR

Supplemental Table 2: Individual PET metrics for each patient and time point.

Study ID	Time point (1=Baseline, 2=Post Cycle 1, 3=Post Cycle 2, 4=End of Therapy)	Scan position performed first	Time between scan positions (min)	Prone				Supine			
				SUV_{peak}	SUV_{max}	SUL_{peak}	SUL_{max}	SUV_{peak}	SUV_{max}	SUL_{peak}	SUL_{max}
1	1	Supine	30.92	16.25	20.65	10.98	13.95	13.95	16.22	9.43	10.96
1	4	Supine	24.88	1.12	2.06	0.78	1.43	1.51	2.30	1.05	1.60
2	1	Supine	23.77	14.06	18.24	9.81	12.72	14.15	16.90	9.87	11.79
2	4	Supine	20.28	1.64	1.93	1.15	1.36	1.98	2.26	1.39	1.59
3	1	Prone	12.77	13.15	14.66	8.35	9.31	15.14	16.35	9.62	10.38
3	4	Prone	9.38	5.13	6.15	3.17	3.81	6.26	7.33	3.88	4.54
4	1	Prone	11.73	3.25	4.05	1.89	2.36	3.50	4.13	2.04	2.41
4	4	Prone	10.17	1.78	2.26	0.97	1.24	2.57	3.00	1.41	1.64
5	1	Prone	11.48	2.24	2.71	1.19	1.44	2.38	2.87	1.27	1.53
6	1	Prone	21.18	17.01	20.19	10.55	12.53	22.10	26.07	13.71	16.17
7	1	Prone	10.22	11.27	14.24	8.02	10.13	12.08	15.41	8.60	10.96
7	4	Prone	10.37	1.22	1.34	0.83	0.91	1.28	1.55	0.87	1.05
8	1	Prone	12.02	9.33	12.00	5.56	7.15	9.86	12.18	5.88	7.26
9	1	Prone	11.52	6.92	8.35	4.79	5.78	7.87	9.68	5.45	6.70
9	4	Prone	10.52	4.51	5.78	3.09	3.97	5.36	6.69	3.67	4.59
10	1	Prone	9.73	5.81	8.68	3.45	5.16	6.21	8.71	3.68	5.17
10	4	Prone	11.95	3.47	5.20	2.30	3.44	4.43	6.71	2.93	4.44
11	1	Prone	10.45	20.48	21.66	13.91	14.71	22.73	24.71	15.44	16.78
12	1	Prone	11.05	8.87	10.89	5.94	7.30	8.99	11.41	6.03	7.65
12	4	Prone	9.65	0.59	0.70	0.39	0.47	0.86	1.28	0.58	0.85
13	1	Prone	10.48	6.40	8.34	5.12	6.67	7.71	10.07	6.16	8.06
13	4	Prone	11.97	0.73	0.80	0.57	0.62	0.72	0.86	0.56	0.67
14	1	Prone	13.17	5.09	6.34	3.68	4.59	6.33	8.39	4.58	6.08
15	1	Prone	11.48	10.61	13.17	7.26	9.01	14.77	17.10	10.11	11.70
16	1	Prone	10.50	5.55	8.11	3.56	5.21	7.45	11.16	4.78	7.17
16	4	Prone	12.22	1.85	2.05	1.15	1.28	1.89	2.18	1.18	1.36
17	1	Prone	9.85	2.19	2.72	1.64	2.04	2.64	3.27	1.99	2.45
17	4	Prone	10.02	1.57	1.92	1.15	1.40	1.41	1.73	1.03	1.27
18	1	Prone	11.40	9.53	12.47	6.20	8.11	13.09	15.21	8.51	9.90
19	1	Prone	11.47	6.35	6.99	4.48	4.93	7.78	9.17	5.49	6.47
19	4	Prone	11.28	1.12	1.41	0.78	0.98	1.34	1.87	0.94	1.31
20	1	Prone	10.95	5.84	7.67	4.31	5.67	7.08	9.88	5.22	7.30
20	4	Prone	9.77	1.16	1.55	0.83	1.12	1.18	1.33	0.85	0.96
21	1	Prone	9.68	1.60	1.90	0.98	1.17	1.73	2.09	1.06	1.28
21	4	Prone	12.30	1.41	1.69	0.89	1.06	1.54	1.92	0.97	1.21

Supplemental Table 2: Individual PET metrics for each patient and time point.

Study ID	Time point (1=Baseline, 2=Post Cycle 1, 3=Post Cycle 2, 4=End of Therapy)	Scan position performed first	Time between scan positions (min)	Prone				Supine			
				SUV_{peak}	SUV_{max}	SUL_{peak}	SUL_{max}	SUV_{peak}	SUV_{max}	SUL_{peak}	SUL_{max}
22	1	Prone	10.20	7.61	9.47	5.27	6.56	9.21	11.96	6.38	8.28
22	4	Prone	11.20	6.45	7.59	4.43	5.21	7.35	9.30	5.05	6.38
23	1	Prone	13.95	4.78	5.14	3.10	3.33	5.97	6.56	3.86	4.24
24	1	Prone	14.15	9.69	10.90	6.31	7.10	10.53	13.29	6.86	8.66
24	4	Prone	11.92	1.53	2.04	0.98	1.31	1.74	2.20	1.11	1.41
25L*	1	Prone	10.65	17.88	20.21	9.97	11.27	21.65	25.57	12.07	14.25
25R*	1	Prone	10.65	7.60	8.51	4.24	4.74	9.63	11.09	5.37	6.18
26	1	Prone	11.90	5.04	6.34	3.59	4.51	5.52	6.12	3.92	4.35
26	4	Prone	10.77	1.50	1.68	1.09	1.22	1.54	1.86	1.12	1.35
27	1	Prone	9.18	8.68	10.19	5.76	6.77	9.37	11.82	6.22	7.85
27	4	Prone	10.88	9.14	10.35	5.89	6.67	11.21	12.96	7.22	8.35
28	1	Prone	9.72	9.20	10.41	5.89	6.66	11.66	13.98	7.46	8.95
28	4	Prone	10.58	1.22	1.79	0.75	1.11	1.38	1.81	0.85	1.12
29	1	Prone	10.25	15.84	18.30	9.62	11.12	20.52	22.29	12.47	13.54
29	3	Prone	10.03	11.13	14.01	6.29	7.91	13.76	17.09	7.77	9.66
30	1	Prone	10.92	2.76	3.69	1.98	2.65	3.54	5.02	2.55	3.61
31	1	Prone	9.73	14.27	17.57	9.28	11.42	18.24	22.81	11.86	14.83
31	3	Prone	10.57	1.27	1.43	0.82	0.93	1.27	1.44	0.83	0.94
32	1	Prone	9.82	6.89	9.28	4.30	5.79	8.94	11.04	5.58	6.89
32	3	Prone	9.43	5.51	7.50	3.38	4.60	6.91	8.86	4.24	5.44
33	1	Prone	12.65	4.78	7.60	2.66	4.23	7.38	10.30	4.11	5.73
33	3	Prone	9.30	7.02	9.88	3.81	5.36	8.79	12.63	4.77	6.85
34	1	Prone	10.97	6.97	10.22	5.00	7.33	8.40	12.79	6.02	9.17
35	1	Prone	9.97	9.61	12.48	5.55	7.21	10.96	13.14	6.33	7.59
35	3	Prone	11.12	4.23	4.80	2.45	2.78	5.28	6.19	3.05	3.58
36	1	Prone	13.65	4.44	6.42	2.24	3.25	5.45	7.96	2.75	4.03
37	3	Prone	10.13	1.41	1.76	1.09	1.35	1.44	1.93	1.11	1.49
38	1	Prone	14.98	10.22	11.53	4.59	5.18	13.53	16.35	6.07	7.34
39	1	Prone	10.50	4.80	7.28	2.84	4.30	6.51	8.91	3.84	5.26
39	3	Prone	10.48	0.83	0.99	0.51	0.61	0.93	1.21	0.57	0.74
40	1	Prone	13.03	3.80	4.20	2.32	2.56	4.43	4.99	2.70	3.05
41	1	Prone	12.93	1.11	1.80	0.83	1.34	0.92	1.28	0.68	0.95
41	3	Prone	11.07	0.72	0.98	0.53	0.72	0.78	1.06	0.58	0.78
42	1	Prone	10.68	10.25	11.47	6.09	6.81	13.32	14.52	7.91	8.62
43	1	Prone	13.75	9.65	13.73	5.65	8.04	10.49	16.60	6.14	9.72

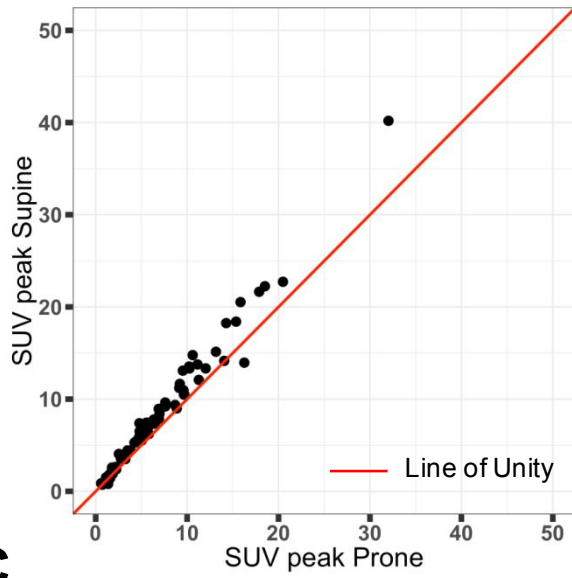
Supplemental Table 2: Individual PET metrics for each patient and time point.

Study ID	Time point (1=Baseline, 2=Post Cycle 1, 3=Post Cycle 2, 4=End of Therapy)	Scan position performed first	Time between scan positions (min)	Prone				Supine			
				<i>SUV_{peak}</i>	<i>SUV_{max}</i>	<i>SUL_{peak}</i>	<i>SUL_{max}</i>	<i>SUV_{peak}</i>	<i>SUV_{max}</i>	<i>SUL_{peak}</i>	<i>SUL_{max}</i>
43	3	Prone	9.95	2.53	3.19	1.48	1.87	4.06	5.51	2.37	3.22
44	1	Prone	10.43	15.35	16.23	11.00	11.63	18.40	20.38	13.19	14.61
44	2	Prone	11.78	12.03	13.19	8.75	9.60	13.33	14.45	9.70	10.51
45	1	Prone	10.62	32.03	41.56	17.21	22.33	40.19	53.92	21.59	28.97
46	1	Prone	12.17	18.51	20.47	7.10	7.86	22.25	24.48	8.54	9.40
47	1	Prone	10.57	1.45	2.12	0.88	1.29	1.76	2.74	1.07	1.67
47	2	Prone	11.95	1.36	1.96	0.84	1.22	0.80	1.09	0.50	0.68
47	3	Prone	10.22	0.98	1.15	0.62	0.73	1.02	1.28	0.64	0.81

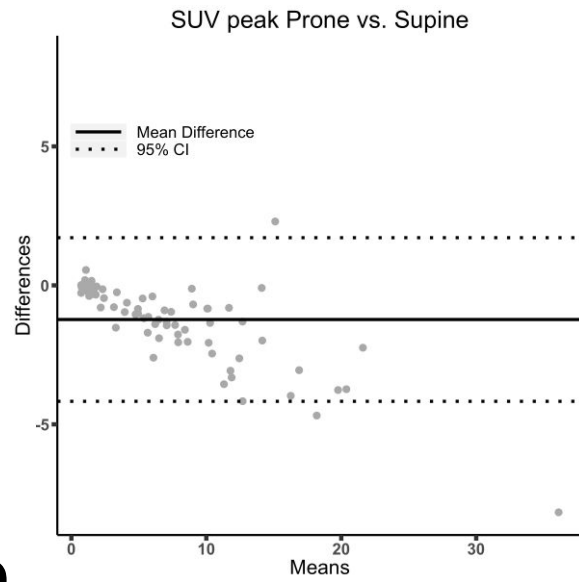
*Patient had two breast lesions, one in each breast; PET values were calculated for both lesions.

Supplemental Figure 1: Scatter and Bland-Altman plots for SUV_{peak} and PERCIST SUV_{peak} .

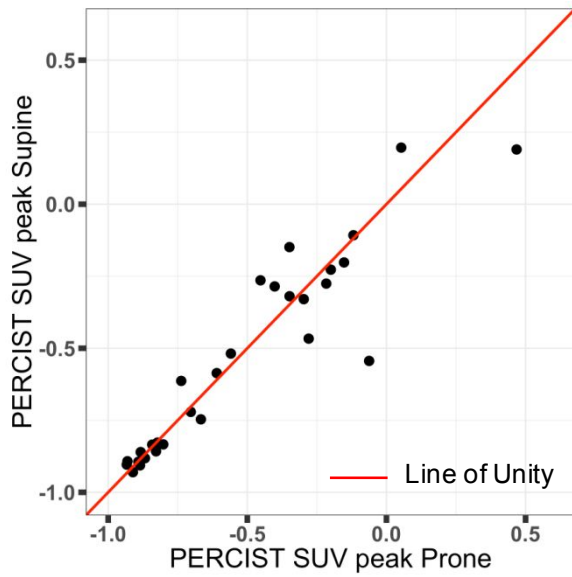
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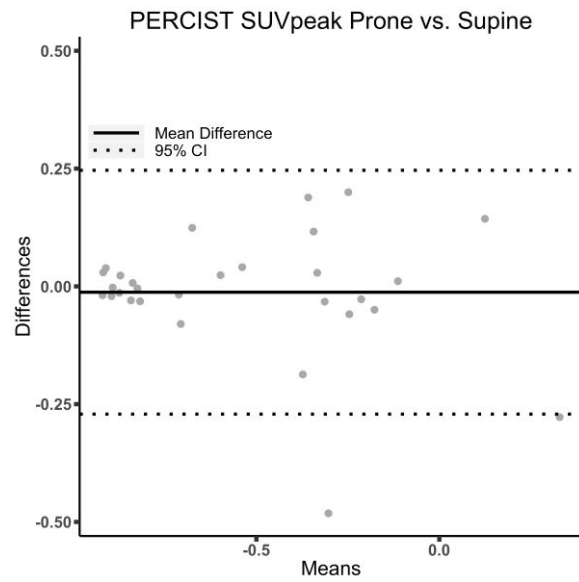
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C

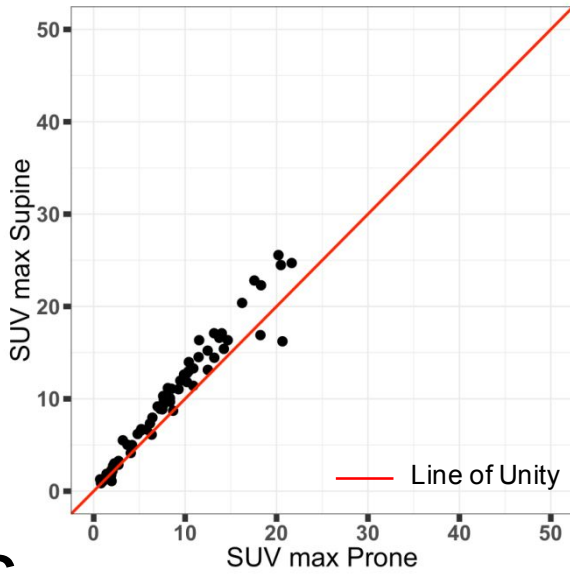


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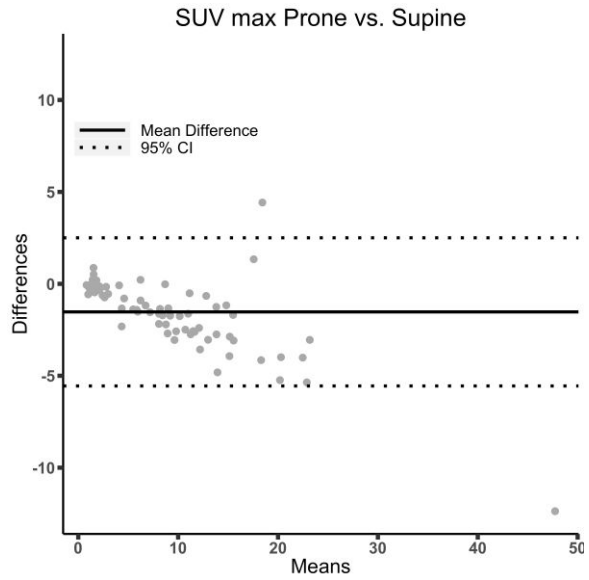


Supplemental Figure 2: Scatter and Bland-Altman plots for SUV_{max} and PERCIST SUV_{max} .

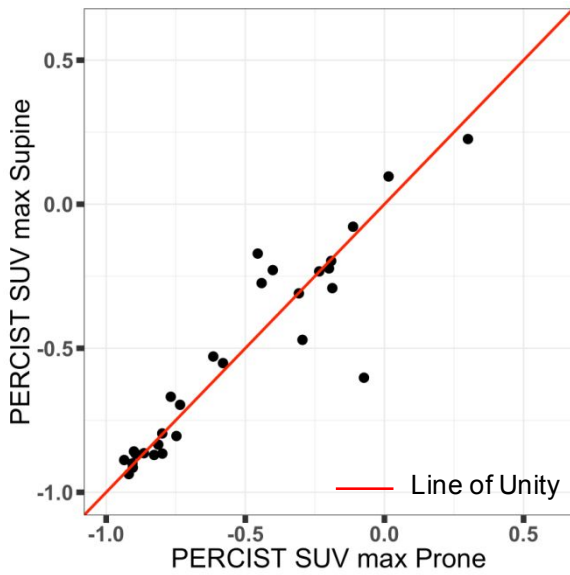
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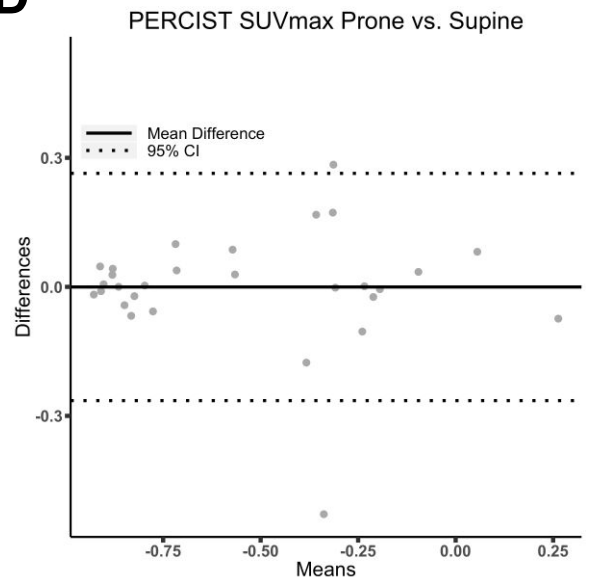
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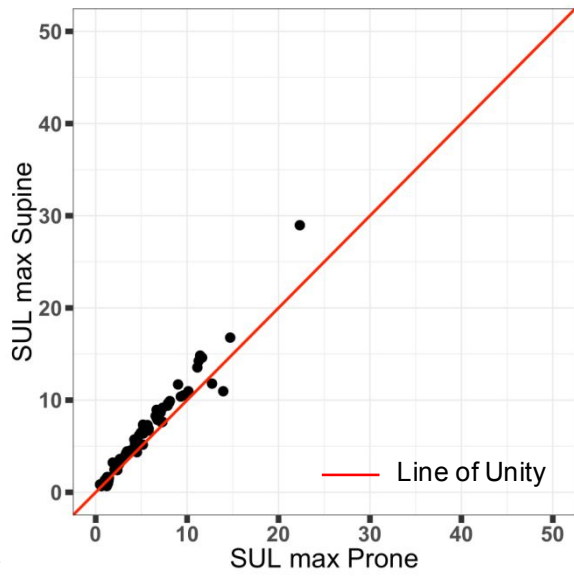


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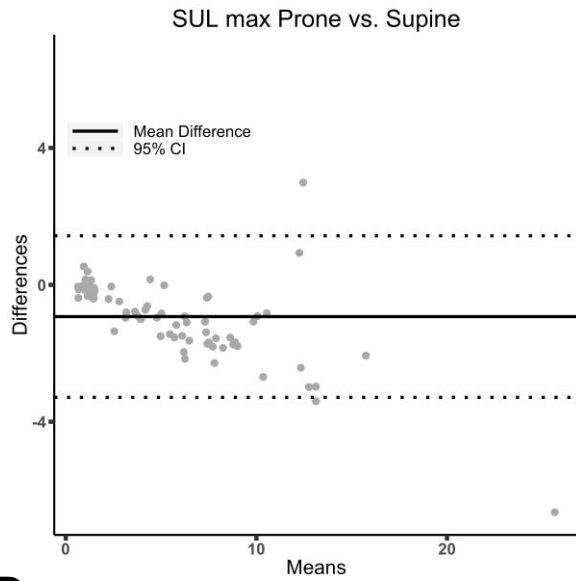


Supplemental Figure 3: Scatter and Bland-Altman plots for SUL_{max} and PERCIST SUL_{max} .

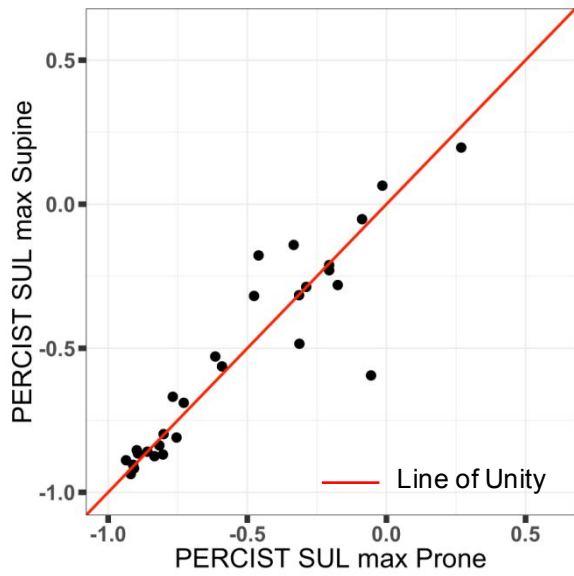
A



B



C



D

