

Supplementary Material

Title: Predicting Human Intelligence Using Deep Learning of Structural MRI: Insights into Fluid, Crystallized, and General Intelligence

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Absolute and Residual IQ Prediction by 2D CNNs

Table 1: Absolute IQ prediction performance by 2D-ResNet18 in setting 1. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds [$N/5$] (corresponding p -value for 5-folds)
1	PIQ	I	5	11.47±9.29	11.28±10.68	0.171	0.268, 0.181, 0.188, 0.17, 0.171 (0.0005, 0.0009, 0.0001, 0.0001, 0.0001)
2	PIQ	I	10	11.56±9.28	11.37±10.75	0.148	0.255, 0.155, 0.183, 0.154, 0.149 (0.0009, 0.0044, 0.0001, 0.0001, 0.0001)
3	PIQ	I	20	11.52±9.11	11.3±10.4	0.186	0.285, 0.232, 0.213, 0.193, 0.186 (0.0002, 0.0001, 0.0001, 0.0001, 0.0001)
4	PIQ	I	40	11.59±9.05	11.42±10.55	0.181	0.138, 0.129, 0.166, 0.154, 0.181 (0.0734, 0.0175, 0.0002, 0.0001, 0.0001)
5	PIQ	I	70	11.51±9.22	11.3±10.57	0.168	0.15, 0.095, 0.19, 0.16, 0.168 (0.0524, 0.0808, 0.0001, 0.0001, 0.0001)
6	PIQ	I	100	11.6±9.09	11.41±10.54	0.164	0.229, 0.19, 0.186, 0.161, 0.165 (0.0028, 0.0005, 0.0001, 0.0001, 0.0001)
7	PIQ	I	130	11.56±9.16	11.4±10.67	0.162	0.141, 0.158, 0.178, 0.156, 0.162 (0.0672, 0.0037, 0.0001, 0.0001, 0.0001)
8	PIQ	R	5	11.71±9.29	11.57±10.93	0.023	0.049, 0.021, 0.009, 0.02, 0.023 (0.5276, 0.7042, 0.844, 0.6058, 0.5045)
9	PIQ	R	10	11.75±9.27	11.55±10.72	0.060	0.111, 0.058, 0.052, 0.054, 0.06 (0.1524, 0.2878, 0.2451, 0.1623, 0.0813)
10	PIQ	R	20	11.64±9.3	11.45±10.7	0.112	0.116, 0.098, 0.079, 0.108, 0.113 (0.1327, 0.0727, 0.0757, 0.0051, 0.0011)
11	PIQ	R	40	11.68±9.44	11.57±11.03	0.090	0.122, 0.111, 0.089, 0.064, 0.091 (0.1148, 0.0421, 0.0452, 0.0986, 0.0085)
12	PIQ	R	70	11.63±9.43	11.53±11.12	0.112	0.097, 0.184, 0.118, 0.111, 0.112 (0.2111, 0.0007, 0.0077, 0.0039, 0.0012)
13	PIQ	R	100	11.57±9.27	11.37±10.65	0.154	0.212, 0.119, 0.132, 0.177, 0.155 (0.0056, 0.0284, 0.0031, 0.0001, 0.0001)
14	PIQ	R	130	11.47±9.51	11.28±10.94	0.174	0.249, 0.173, 0.164, 0.187, 0.174 (0.0011, 0.0015, 0.0003, 0.0001, 0.0001)
15	PIQ	IR	5	11.65±9.36	11.54±11.05	0.072	0.162, 0.12, 0.097, 0.076, 0.073 (0.0353, 0.027, 0.0297, 0.0477, 0.0354)
16	PIQ	IR	10	11.76±9.3	11.64±11.08	0.058	0.091, 0.065, 0.057, 0.043, 0.058 (0.2387, 0.2339, 0.2055, 0.2695, 0.0936)
17	PIQ	IR	20	11.66±9.3	11.59±11.12	0.097	0.049, 0.079, 0.103, 0.093, 0.097 (0.5281, 0.1494, 0.0206, 0.0158, 0.0047)
18	PIQ	IR	40	11.51±9.25	11.26±10.53	0.162	0.12, 0.19, 0.148, 0.165, 0.163 (0.1196, 0.0005, 0.0009, 0.0001, 0.0001)
19	PIQ	IR	70	11.54±9.33	11.36±10.82	0.140	-0.014, 0.127, 0.16, 0.155, 0.141 (0.8502, 0.0197, 0.0004, 0.0001, 0.0001)
20	PIQ	IR	100	11.51±9.43	11.4±11.06	0.128	0.165, 0.107, 0.15, 0.135, 0.129 (0.0322, 0.0505, 0.0007, 0.0005, 0.0002)

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Table 1 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
21	PIQ	IR	130	11.67±9.21	11.45±10.57	0.119	0.207, 0.148, 0.161, 0.141, 0.119 (0.007, 0.0065, 0.0003, 0.0003, 0.0006)
22	VIQ	I	5	11.84±9.18	11.47±10.75	0.186	0.258, 0.18, 0.173, 0.167, 0.187 (0.0007, 0.0009, 0.0001, 0.0001, 0.0001)
23	VIQ	I	10	11.85±9.3	11.52±10.97	0.161	0.218, 0.147, 0.097, 0.102, 0.162 (0.0044, 0.0069, 0.0299, 0.008, 0.0001)
24	VIQ	I	20	11.82±9.19	11.42±10.66	0.187	0.152, 0.122, 0.206, 0.178, 0.187 (0.0482, 0.0253, 0.0001, 0.0001, 0.0001)
25	VIQ	I	40	11.89±9.26	11.47±10.73	0.158	0.196, 0.155, 0.155, 0.134, 0.159 (0.0107, 0.0042, 0.0005, 0.0005, 0.0001)
26	VIQ	I	70	11.77±9.28	11.36±10.74	0.183	0.254, 0.196, 0.216, 0.187, 0.183 (0.0009, 0.0003, 0.0001, 0.0001, 0.0001)
27	VIQ	I	100	11.82±9.34	11.46±10.85	0.157	0.151, 0.123, 0.175, 0.151, 0.157 (0.0496, 0.0236, 0.0001, 0.0001, 0.0001)
28	VIQ	I	130	11.87±9.24	11.45±10.76	0.176	0.142, 0.114, 0.172, 0.152, 0.177 (0.0663, 0.0367, 0.0002, 0.0001, 0.0001)
29	VIQ	R	5	12.06±9.25	11.72±10.93	0.085	0.095, 0.072, 0.035, 0.069, 0.086 (0.2213, 0.1856, 0.433, 0.0739, 0.0131)
30	VIQ	R	10	12.13±9.4	11.84±11.2	0.143	0.188, 0.221, 0.182, 0.149, 0.144 (0.0143, 0.0001, 0.0001, 0.0002, 0.0001)
31	VIQ	R	20	12.07±9.33	11.74±10.99	0.060	0.074, 0.049, 0.061, 0.033, 0.061 (0.3413, 0.369, 0.1741, 0.4016, 0.0795)
32	VIQ	R	40	11.98±9.44	11.62±11.12	0.090	-0.024, 0.079, 0.045, 0.055, 0.09 (0.7544, 0.1478, 0.3111, 0.1521, 0.0088)
33	VIQ	R	70	12.04±9.28	11.52±10.51	0.118	0.073, 0.106, 0.086, 0.085, 0.118 (0.3459, 0.051, 0.0539, 0.0278, 0.0006)
34	VIQ	R	100	12.04±9.48	11.7±11.22	0.040	0.067, 0.03, 0.023, 0.013, 0.04 (0.3869, 0.5852, 0.6126, 0.7361, 0.2496)
35	VIQ	R	130	12.0±9.4	11.72±11.24	0.082	0.029, 0.053, 0.034, 0.034, 0.082 (0.7136, 0.339, 0.4542, 0.3827, 0.0169)
36	VIQ	IR	5	12.05±9.23	11.7±10.89	0.105	0.028, 0.041, 0.039, 0.052, 0.106 (0.7254, 0.4571, 0.3799, 0.1761, 0.0022)
37	VIQ	IR	10	12.15±9.45	11.91±11.44	0.046	0.172, 0.05, 0.027, 0.012, 0.047 (0.0251, 0.3593, 0.5476, 0.7632, 0.177)
38	VIQ	IR	20	12.11±9.27	11.67±10.79	0.065	-0.087, 0.026, 0.024, 0.034, 0.066 (0.2567, 0.6337, 0.5967, 0.3881, 0.0571)
39	VIQ	IR	40	12.04±9.29	11.64±10.87	0.069	-0.001, 0.042, 0.029, -0.002, 0.069 (0.9827, 0.4501, 0.5136, 0.9425, 0.0451)
40	VIQ	IR	70	12.06±9.23	11.64±10.74	0.090	-0.059, 0.086, 0.07, 0.079, 0.091 (0.444, 0.1136, 0.1195, 0.0405, 0.0085)
41	VIQ	IR	100	12.04±9.42	11.71±11.11	0.067	0.064, 0.014, 0.0, 0.013, 0.068 (0.4094, 0.8045, 0.987, 0.751, 0.0497)
42	VIQ	IR	130	12.06±9.33	11.67±10.98	0.069	0.08, 0.044, 0.042, 0.055, 0.069 (0.3013, 0.4238, 0.3522, 0.154, 0.0446)
43	FSIQ	I	5	11.35±8.61	10.89±9.38	0.179	0.169, 0.136, 0.179, 0.159, 0.179 (0.0284, 0.0124, 0.0001, 0.0001, 0.0001)
44	FSIQ	I	10	11.32±8.62	10.81±9.28	0.178	0.222, 0.169, 0.176, 0.156, 0.178 (0.0038, 0.0018, 0.0001, 0.0001, 0.0001)
45	FSIQ	I	20	11.39±8.64	10.9±9.36	0.160	0.206, 0.088, 0.155, 0.131, 0.161 (0.0072, 0.1068, 0.0005, 0.0007, 0.0001)
46	FSIQ	I	40	11.37±8.61	10.91±9.41	0.179	0.223, 0.182, 0.184, 0.158, 0.18 (0.0037, 0.0008, 0.0001, 0.0001, 0.0001)
47	FSIQ	I	70	11.35±8.75	10.9±9.56	0.139	0.171, 0.145, 0.16, 0.136, 0.14 (0.0261, 0.0077, 0.0004, 0.0004, 0.0001)
48	FSIQ	I	100	11.28±8.69	10.78±9.31	0.176	0.174, 0.183, 0.199, 0.167, 0.176 (0.024, 0.0008, 0.0001, 0.0001, 0.0001)
49	FSIQ	I	130	11.29±8.56	10.76±9.15	0.201	0.217, 0.193, 0.236, 0.203, 0.202 (0.0046, 0.0004, 0.0001, 0.0001, 0.0001)
50	FSIQ	R	5	11.49±8.79	10.91±9.32	0.078	0.041, 0.039, 0.062, 0.073, 0.078 (0.5989, 0.4761, 0.1653, 0.0596, 0.0235)
51	FSIQ	R	10	11.53±8.74	11.09±9.73	0.048	0.031, 0.076, 0.07, 0.041, 0.048 (0.6948, 0.1666, 0.1171, 0.2953, 0.1625)
52	FSIQ	R	20	11.44±8.64	10.91±9.3	0.136	0.039, 0.153, 0.181, 0.15, 0.136 (0.6192, 0.0048, 0.0001, 0.0001, 0.0001)
53	FSIQ	R	40	11.44±8.74	10.99±9.59	0.100	-0.056, 0.048, 0.115, 0.073, 0.1 (0.4666, 0.3845, 0.0098, 0.0606, 0.0036)
54	FSIQ	R	70	11.36±8.86	10.83±9.48	0.163	0.014, 0.132, 0.13, 0.163, 0.164 (0.8626, 0.015, 0.0035, 0.0001, 0.0001)

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Table 1 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
55	FSIQ	R	100	11.45±8.92	11.04±9.82	0.153	-0.023, 0.127, 0.122, 0.16, 0.154 (0.7575, 0.0194, 0.0061, 0.0001, 0.0001)
56	FSIQ	R	130	11.38±8.77	10.85±9.37	0.163	0.029, 0.124, 0.14, 0.161, 0.164 (0.712, 0.0228, 0.0016, 0.0001, 0.0001)
57	FSIQ	IR	5	11.44±8.76	11.02±9.69	0.105	0.034, 0.145, 0.108, 0.095, 0.105 (0.6655, 0.0078, 0.0151, 0.0135, 0.0023)
58	FSIQ	IR	10	11.44±8.87	11.0±9.68	0.122	0.107, 0.1, 0.117, 0.108, 0.122 (0.1681, 0.0677, 0.0088, 0.0052, 0.0004)
59	FSIQ	IR	20	11.5±8.68	11.04±9.51	0.084	0.045, 0.022, 0.034, 0.053, 0.084 (0.5639, 0.6888, 0.4441, 0.1718, 0.0145)
60	FSIQ	IR	40	11.32±8.85	10.85±9.61	0.144	0.127, 0.114, 0.114, 0.076, 0.145 (0.0992, 0.0365, 0.0102, 0.0494, 0.0001)
61	FSIQ	IR	70	11.4±8.75	10.94±9.58	0.145	0.115, 0.163, 0.172, 0.145, 0.146 (0.1356, 0.0027, 0.0002, 0.0002, 0.0001)
62	FSIQ	IR	100	11.38±8.79	10.89±9.54	0.189	0.184, 0.166, 0.144, 0.137, 0.19 (0.0165, 0.0023, 0.0012, 0.0004, 0.0001)
63	FSIQ	IR	130	11.38±8.85	10.92±9.67	0.121	0.053, 0.088, 0.122, 0.105, 0.121 (0.4996, 0.1085, 0.006, 0.0062, 0.0005)

Table 2: Absolute IQ prediction performance by 2D-ResNet18 in setting 2. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
64	FSIQ	I	5	11.44±8.56	10.95±9.3	0.156	0.157, 0.116, 0.167, 0.11, 0.069 (0.0416, 0.133, 0.0297, 0.0443, 0.2056)
64	PIQ	I	5	11.58±9.22	11.42±10.8	0.131	0.153, 0.1, 0.073, 0.099, 0.093 (0.0049, 0.0253, 0.0998, 0.0264, 0.0162)
64	VIQ	I	5	12.0±9.2	11.59±10.69	0.126	0.065, 0.089, 0.156, 0.131, 0.126 (0.0921, 0.021, 0.0001, 0.0002, 0.0003)
65	FSIQ	I	10	11.42±8.54	10.96±9.34	0.166	0.218, 0.176, 0.178, 0.162, 0.14 (0.0045, 0.0217, 0.0204, 0.0028, 0.0101)
65	PIQ	I	10	11.65±9.12	11.47±10.62	0.137	0.102, 0.132, 0.115, 0.081, 0.15 (0.0603, 0.0031, 0.0095, 0.068, 0.0001)
65	VIQ	I	10	12.0±9.34	11.6±10.83	0.100	0.124, 0.074, 0.167, 0.137, 0.101 (0.0013, 0.0557, 0.0001, 0.0001, 0.0035)
66	FSIQ	I	20	11.41±8.56	10.85±9.09	0.174	0.241, 0.209, 0.179, 0.162, 0.159 (0.0016, 0.0063, 0.0197, 0.0028, 0.0034)
66	PIQ	I	20	11.61±9.15	11.35±10.4	0.154	0.105, 0.16, 0.159, 0.119, 0.145 (0.055, 0.0004, 0.0004, 0.0075, 0.0002)
66	VIQ	I	20	12.04±9.18	11.57±10.47	0.133	0.145, 0.103, 0.174, 0.155, 0.134 (0.0002, 0.0076, 0.0001, 0.0001, 0.0001)
67	FSIQ	I	40	11.46±8.59	10.95±9.26	0.135	0.119, 0.121, 0.051, 0.085, 0.065 (0.1229, 0.1178, 0.5133, 0.1189, 0.2332)
67	PIQ	I	40	11.67±9.18	11.44±10.52	0.110	0.099, 0.126, 0.085, 0.128, 0.108 (0.069, 0.0044, 0.0577, 0.004, 0.0052)
67	VIQ	I	40	12.0±9.24	11.61±10.75	0.108	0.079, 0.091, 0.136, 0.11, 0.109 (0.0397, 0.0185, 0.0001, 0.0014, 0.0016)
68	FSIQ	I	70	11.35±8.6	10.87±9.35	0.174	0.145, 0.131, 0.121, 0.151, 0.133 (0.061, 0.0909, 0.1168, 0.0056, 0.0146)

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Table 2 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
68	PIQ	I	70	11.58±9.28	11.49±11.02	0.132	0.139, 0.199, 0.159, 0.133, 0.172 (0.0107, 0.0001, 0.0004, 0.0027, 0.0001)
68	VIQ	I	70	12.0±9.28	11.67±11.01	0.112	0.128, 0.101, 0.175, 0.132, 0.113 (0.0009, 0.0085, 0.0001, 0.0002, 0.0011)
69	FSIQ	I	100	11.38±8.63	10.9±9.34	0.155	0.191, 0.14, 0.177, 0.168, 0.15 (0.0128, 0.0704, 0.0214, 0.002, 0.0059)
69	PIQ	I	100	11.64±9.17	11.43±10.61	0.127	0.133, 0.191, 0.16, 0.143, 0.153 (0.0146, 0.0001, 0.0004, 0.0013, 0.0001)
69	VIQ	I	100	11.99±9.23	11.62±10.77	0.121	0.129, 0.114, 0.156, 0.128, 0.121 (0.0008, 0.003, 0.0001, 0.0003, 0.0005)
70	FSIQ	I	130	11.35±8.59	10.86±9.3	0.178	0.152, 0.086, 0.171, 0.156, 0.109 (0.0483, 0.2704, 0.0261, 0.0041, 0.0465)
70	PIQ	I	130	11.58±9.19	11.4±10.68	0.142	0.175, 0.189, 0.138, 0.147, 0.158 (0.0013, 0.0001, 0.0019, 0.001, 0.0001)
70	VIQ	I	130	11.9±9.29	11.51±10.76	0.136	0.116, 0.13, 0.178, 0.142, 0.136 (0.0026, 0.0008, 0.0001, 0.0001, 0.0001)
71	FSIQ	R	5	11.59±8.79	11.23±9.92	0.097	0.095, 0.152, 0.015, 0.066, 0.058 (0.2221, 0.0492, 0.847, 0.2259, 0.2914)
71	PIQ	R	5	11.85±9.51	11.88±11.58	0.073	0.056, 0.077, 0.066, 0.062, 0.08 (0.3115, 0.086, 0.1414, 0.167, 0.0384)
71	VIQ	R	5	12.12±9.39	11.81±11.12	0.069	0.063, 0.059, 0.098, 0.074, 0.07 (0.1058, 0.1269, 0.0045, 0.0334, 0.0432)
72	FSIQ	R	10	11.63±8.82	11.06±9.41	0.020	-0.006, 0.012, -0.032, 0.053, 0.054 (0.9303, 0.8794, 0.6723, 0.3328, 0.321)
72	PIQ	R	10	11.78±9.33	11.58±10.8	0.022	0.015, 0.037, 0.047, 0.012, 0.022 (0.7904, 0.4148, 0.2902, 0.7924, 0.5744)
72	VIQ	R	10	12.32±9.37	11.83±10.65	0.009	0.024, 0.006, 0.021, 0.023, 0.009 (0.5375, 0.895, 0.554, 0.5155, 0.8025)
73	FSIQ	R	20	11.53±8.75	11.06±9.59	0.089	0.079, 0.174, -0.079, 0.067, 0.162 (0.3067, 0.0239, 0.3036, 0.2212, 0.0029)
73	PIQ	R	20	11.71±9.26	11.54±10.8	0.091	-0.008, 0.054, 0.099, -0.016, 0.058 (0.8827, 0.229, 0.0266, 0.7172, 0.1358)
73	VIQ	R	20	12.08±9.52	11.79±11.3	0.032	0.085, -0.004, 0.089, 0.092, 0.033 (0.0277, 0.9163, 0.0097, 0.0078, 0.3459)
74	FSIQ	R	40	11.46±8.72	10.96±9.48	0.096	-0.058, -0.009, -0.074, 0.052, 0.033 (0.4495, 0.9067, 0.3339, 0.3423, 0.5505)
74	PIQ	R	40	11.74±9.38	11.73±11.36	0.068	0.044, 0.079, 0.052, 0.052, 0.052 (0.4257, 0.0775, 0.2452, 0.2487, 0.1817)
74	VIQ	R	40	11.99±9.38	11.59±10.93	0.086	0.033, 0.048, 0.096, 0.068, 0.087 (0.3959, 0.2157, 0.0053, 0.0482, 0.0121)
75	FSIQ	R	70	11.46±8.7	10.97±9.46	0.106	0.03, 0.027, 0.046, 0.077, 0.115 (0.7045, 0.7347, 0.5534, 0.159, 0.0355)
75	PIQ	R	70	11.65±9.35	11.48±10.84	0.073	0.009, 0.075, 0.054, 0.091, 0.076 (0.8821, 0.0915, 0.2254, 0.0402, 0.0484)
75	VIQ	R	70	12.0±9.28	11.61±10.83	0.095	0.067, 0.062, 0.106, 0.074, 0.096 (0.0846, 0.1091, 0.0021, 0.0322, 0.0055)
76	FSIQ	R	100	11.36±8.77	10.92±9.67	0.130	0.164, 0.168, 0.089, 0.136, 0.179 (0.0327, 0.0287, 0.2494, 0.0122, 0.001)
76	PIQ	R	100	11.53±9.35	11.43±11.03	0.131	0.061, 0.167, 0.164, 0.114, 0.143 (0.2634, 0.0002, 0.0003, 0.0105, 0.0002)
76	VIQ	R	100	12.13±9.4	11.79±11.08	0.045	0.154, 0.049, 0.13, 0.132, 0.046 (0.0001, 0.2034, 0.0002, 0.0002, 0.1895)
77	FSIQ	R	130	11.35±8.7	10.92±9.55	0.171	0.016, 0.032, 0.01, 0.067, 0.065 (0.8434, 0.6869, 0.9051, 0.2233, 0.2329)
77	PIQ	R	130	11.59±9.25	11.54±10.97	0.167	0.037, 0.147, 0.127, 0.109, 0.188 (0.4974, 0.001, 0.0044, 0.0146, 0.0001)
77	VIQ	R	130	11.99±9.4	11.64±11.02	0.118	0.185, 0.106, 0.172, 0.167, 0.118 (0.0001, 0.0061, 0.0001, 0.0001, 0.0006)
78	FSIQ	IR	5	11.54±8.65	11.0±9.29	0.082	0.064, 0.086, 0.03, 0.028, 0.035 (0.4073, 0.2653, 0.7037, 0.6149, 0.5209)
78	PIQ	IR	5	11.78±9.24	11.54±10.57	0.046	0.028, 0.01, 0.008, 0.01, 0.053 (0.6078, 0.8268, 0.8583, 0.8261, 0.1683)
78	VIQ	IR	5	12.13±9.16	11.69±10.68	0.076	0.011, 0.061, 0.083, 0.046, 0.077 (0.7939, 0.1177, 0.0167, 0.1828, 0.0259)
79	FSIQ	IR	10	11.56±8.7	11.01±9.38	0.070	-0.012, 0.027, 0.012, -0.015, -0.039 (0.8741, 0.7328, 0.878, 0.7777, 0.4722)
79	PIQ	IR	10	11.67±9.3	11.53±10.96	0.068	0.049, 0.062, 0.062, 0.07, 0.025 (0.3717, 0.1622, 0.1642, 0.118, 0.5181)

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Table 2 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
79	VIQ	IR	10	12.21±9.29	11.84±10.96	0.039	0.048, -0.003, 0.071, 0.068, 0.04 (0.2114, 0.9244, 0.0413, 0.0486, 0.2524)
80	FSIQ	IR	20	11.51±8.69	11.08±9.65	0.102	0.006, 0.061, -0.06, 0.032, 0.045 (0.9427, 0.4314, 0.4316, 0.5657, 0.4174)
80	PIQ	IR	20	11.69±9.29	11.63±11.12	0.104	0.006, 0.106, 0.117, 0.051, 0.095 (0.9196, 0.0172, 0.0087, 0.2522, 0.0139)
80	VIQ	IR	20	12.05±9.32	11.67±10.92	0.086	0.107, 0.064, 0.102, 0.105, 0.087 (0.0055, 0.0992, 0.0031, 0.0024, 0.0122)
81	FSIQ	IR	40	11.45±8.65	10.96±9.41	0.123	-0.019, 0.027, -0.049, 0.021, -0.013 (0.8011, 0.7278, 0.5193, 0.7022, 0.8076)
81	PIQ	IR	40	11.6±9.38	11.58±11.33	0.119	0.063, 0.059, 0.055, 0.031, 0.049 (0.2469, 0.1889, 0.2171, 0.4927, 0.2068)
81	VIQ	IR	40	12.08±9.25	11.7±10.83	0.086	0.046, 0.026, 0.124, 0.119, 0.086 (0.2358, 0.5078, 0.0004, 0.0006, 0.0125)
82	FSIQ	IR	70	11.5±8.84	11.07±9.73	0.081	0.189, 0.165, 0.148, 0.056, 0.108 (0.0138, 0.0317, 0.0544, 0.3064, 0.0475)
82	PIQ	IR	70	11.58±9.43	11.45±10.98	0.084	0.048, 0.042, 0.091, 0.003, 0.062 (0.3848, 0.3521, 0.0409, 0.954, 0.1113)
82	VIQ	IR	70	12.16±9.31	11.77±10.86	0.053	0.092, 0.019, 0.082, 0.085, 0.054 (0.0165, 0.6388, 0.018, 0.014, 0.1218)
83	FSIQ	IR	100	11.47±8.6	10.94±9.27	0.140	0.099, 0.067, 0.104, 0.096, 0.11 (0.2018, 0.3855, 0.1792, 0.0789, 0.0446)
83	PIQ	IR	100	11.55±9.23	11.39±10.78	0.146	0.076, 0.117, 0.134, 0.065, 0.116 (0.1661, 0.0085, 0.0025, 0.1434, 0.0025)
83	VIQ	IR	100	12.11±9.31	11.73±10.9	0.063	0.109, 0.072, 0.14, 0.147, 0.063 (0.0046, 0.0613, 0.0001, 0.0001, 0.0666)
84	FSIQ	IR	130	11.5±8.69	11.0±9.42	0.091	0.097, 0.068, 0.079, 0.098, 0.076 (0.2088, 0.38, 0.3101, 0.0728, 0.1666)
84	PIQ	IR	130	11.63±9.33	11.52±10.99	0.087	0.057, 0.123, 0.108, 0.102, 0.09 (0.3001, 0.0058, 0.0152, 0.0214, 0.0198)
84	VIQ	IR	130	12.08±9.2	11.71±10.79	0.092	0.098, 0.092, 0.092, 0.087, 0.093 (0.0113, 0.0166, 0.0079, 0.0116, 0.007)

Table 3: Absolute IQ prediction performance by 2D-VGG8 in setting 1. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
85	PIQ	I	5	12.23±9.78	12.05±11.22	0.005	0.111, 0.07, 0.061, 0.025, 0.005 (0.1531, 0.2042, 0.1741, 0.5213, 0.889)
86	PIQ	I	10	11.9±9.43	11.59±10.57	0.050	0.073, 0.074, 0.106, 0.079, 0.051 (0.3442, 0.1753, 0.0174, 0.042, 0.1453)
87	PIQ	I	20	11.75±9.24	11.53±10.67	0.118	0.241, 0.186, 0.171, 0.136, 0.118 (0.0016, 0.0006, 0.0002, 0.0005, 0.0006)
88	PIQ	I	40	11.72±9.17	11.52±10.55	0.116	0.161, 0.131, 0.125, 0.105, 0.116 (0.0366, 0.0159, 0.0048, 0.0063, 0.0008)
89	PIQ	I	70	11.73±9.26	11.53±10.61	0.113	0.215, 0.15, 0.102, 0.092, 0.113 (0.005, 0.0056, 0.0218, 0.0169, 0.0011)
90	PIQ	I	100	11.55±9.24	11.29±10.5	0.171	0.163, 0.14, 0.195, 0.169, 0.171 (0.0338, 0.0101, 0.0001, 0.0001, 0.0001)

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Table 3 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
91	PIQ	I	130	11.61±9.18	11.4±10.56	0.150	0.255, 0.211, 0.184, 0.151, 0.151 (0.0009, 0.0001, 0.0001, 0.0001, 0.0001)
92	PIQ	R	5	11.8±9.41	11.64±10.91	0.077	0.032, 0.09, 0.09, 0.099, 0.077 (0.6864, 0.0987, 0.0444, 0.0099, 0.0253)
93	PIQ	R	10	12.01±9.51	11.78±11.03	0.038	0.018, 0.113, 0.081, 0.038, 0.038 (0.8161, 0.0377, 0.0691, 0.3311, 0.2717)
94	PIQ	R	20	11.93±9.38	11.7±10.93	0.083	0.034, 0.068, 0.069, 0.092, 0.084 (0.6656, 0.2145, 0.1228, 0.017, 0.0152)
95	PIQ	R	40	11.75±9.28	11.49±10.6	0.121	0.075, 0.072, 0.061, 0.074, 0.122 (0.336, 0.1857, 0.1706, 0.0564, 0.0004)
96	PIQ	R	70	11.81±9.47	11.64±10.87	0.111	0.206, 0.144, 0.156, 0.152, 0.112 (0.0072, 0.0079, 0.0005, 0.0001, 0.0012)
97	PIQ	R	100	12.06±9.37	11.82±10.57	0.073	-0.017, 0.05, 0.052, 0.094, 0.074 (0.8218, 0.3585, 0.2427, 0.0151, 0.0326)
98	PIQ	R	130	12.22±9.58	11.99±10.97	0.066	0.155, 0.079, 0.04, 0.049, 0.067 (0.0437, 0.1461, 0.3746, 0.205, 0.0533)
99	PIQ	IR	5	11.96±9.65	11.65±10.73	0.063	0.163, 0.088, 0.059, 0.06, 0.063 (0.0346, 0.1066, 0.1881, 0.119, 0.0671)
100	PIQ	IR	10	11.95±9.47	11.73±10.91	0.035	0.147, 0.107, 0.04, 0.057, 0.035 (0.0566, 0.0488, 0.3675, 0.1445, 0.3136)
101	PIQ	IR	20	11.74±9.31	11.56±10.82	0.158	0.3, 0.246, 0.189, 0.172, 0.159 (0.0001, 0.0001, 0.0001, 0.0001, 0.0001)
102	PIQ	IR	40	11.93±9.33	11.79±10.98	0.149	0.101, 0.172, 0.13, 0.138, 0.149 (0.192, 0.0015, 0.0036, 0.0004, 0.0001)
103	PIQ	IR	70	11.81±9.3	11.53±10.36	0.162	0.15, 0.162, 0.153, 0.172, 0.163 (0.0521, 0.0029, 0.0006, 0.0001, 0.0001)
104	PIQ	IR	100	11.87±9.41	11.66±10.7	0.123	0.139, 0.133, 0.119, 0.129, 0.123 (0.0722, 0.0147, 0.0073, 0.0008, 0.0004)
105	PIQ	IR	130	11.81±9.24	11.66±10.82	0.155	0.177, 0.191, 0.182, 0.171, 0.155 (0.0217, 0.0005, 0.0001, 0.0001, 0.0001)
106	VIQ	I	5	12.44±9.69	12.08±11.34	0.047	-0.076, 0.072, 0.076, 0.055, 0.047 (0.3208, 0.186, 0.0896, 0.1522, 0.1753)
107	VIQ	I	10	12.45±9.29	12.02±10.78	0.023	0.024, 0.06, 0.078, 0.029, 0.024 (0.7657, 0.2733, 0.0792, 0.4568, 0.5008)
108	VIQ	I	20	12.16±9.61	11.8±11.33	0.098	0.132, 0.054, 0.085, 0.08, 0.098 (0.0865, 0.3268, 0.0572, 0.0389, 0.0044)
109	VIQ	I	40	11.82±9.33	11.37±10.65	0.167	0.256, 0.203, 0.186, 0.161, 0.168 (0.0008, 0.0002, 0.0001, 0.0001, 0.0001)
110	VIQ	I	70	11.84±9.44	11.57±11.27	0.163	0.13, 0.085, 0.075, 0.147, 0.164 (0.0922, 0.118, 0.0931, 0.0002, 0.0001)
111	VIQ	I	100	11.9±9.42	11.59±11.16	0.165	0.127, 0.154, 0.125, 0.135, 0.165 (0.1014, 0.0047, 0.0049, 0.0005, 0.0001)
112	VIQ	I	130	11.79±9.27	11.4±10.72	0.186	0.179, 0.193, 0.202, 0.172, 0.187 (0.0197, 0.0004, 0.0001, 0.0001, 0.0001)
113	VIQ	R	5	12.23±9.67	11.86±11.26	0.094	0.149, 0.091, 0.107, 0.073, 0.094 (0.0526, 0.0944, 0.0159, 0.058, 0.0062)
114	VIQ	R	10	12.21±9.45	11.77±10.82	0.094	0.093, 0.103, 0.062, 0.068, 0.095 (0.2279, 0.0598, 0.1662, 0.0793, 0.0059)
115	VIQ	R	20	12.17±9.27	11.74±10.65	0.123	0.209, 0.164, 0.154, 0.127, 0.123 (0.0065, 0.0026, 0.0006, 0.001, 0.0004)
116	VIQ	R	40	12.5±9.49	12.05±10.86	0.020	0.031, 0.017, -0.002, 0.003, 0.021 (0.6937, 0.7673, 0.9546, 0.9551, 0.5577)
117	VIQ	R	70	12.22±9.73	11.92±11.38	0.099	0.238, 0.186, 0.135, 0.094, 0.099 (0.0019, 0.0006, 0.0024, 0.0149, 0.0041)
118	VIQ	R	100	12.27±9.61	11.82±10.95	0.104	0.058, 0.142, 0.098, 0.103, 0.104 (0.4548, 0.0088, 0.028, 0.0076, 0.0025)
119	VIQ	R	130	12.49±9.53	12.01±10.86	0.113	0.036, 0.068, 0.097, 0.077, 0.114 (0.6468, 0.2154, 0.0294, 0.0448, 0.001)
120	VIQ	IR	5	12.33±9.46	11.88±10.88	0.040	0.107, 0.017, 0.013, 0.025, 0.04 (0.1664, 0.7621, 0.7766, 0.5219, 0.2498)
121	VIQ	IR	10	12.02±9.32	11.59±10.67	0.147	0.152, 0.162, 0.141, 0.14, 0.148 (0.0484, 0.0029, 0.0015, 0.0003, 0.0001)
122	VIQ	IR	20	12.37±9.43	11.86±10.59	0.043	0.03, 0.069, 0.019, 0.023, 0.043 (0.6983, 0.205, 0.6724, 0.5628, 0.2135)
123	VIQ	IR	40	12.44±9.82	11.79±10.52	0.031	0.064, 0.028, -0.007, 0.013, 0.031 (0.4084, 0.6138, 0.861, 0.7485, 0.3742)
124	VIQ	IR	70	12.29±9.49	11.84±10.87	0.073	0.067, 0.115, 0.094, 0.071, 0.073 (0.3879, 0.0352, 0.0341, 0.0679, 0.0345)

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Table 3 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
125	VIQ	IR	100	12.19±9.31	11.73±10.62	0.129	0.135, 0.161, 0.158, 0.148, 0.129 (0.0813, 0.003, 0.0004, 0.0002, 0.0002)
126	VIQ	IR	130	12.23±9.48	11.79±10.95	0.100	0.03, 0.092, 0.085, 0.096, 0.101 (0.7071, 0.0926, 0.0571, 0.013, 0.0035)
127	FSIQ	I	5	11.7±8.96	11.23±9.82	0.060	0.084, 0.066, 0.075, 0.044, 0.061 (0.2794, 0.2261, 0.0912, 0.2565, 0.0782)
128	FSIQ	I	10	11.85±8.98	11.26±9.56	0.011	0.132, 0.058, 0.063, 0.031, 0.011 (0.0885, 0.293, 0.1614, 0.4305, 0.7548)
129	FSIQ	I	20	11.78±8.93	11.11±9.25	0.035	0.026, 0.028, 0.033, 0.022, 0.035 (0.7405, 0.6109, 0.4683, 0.5823, 0.309)
130	FSIQ	I	40	11.51±8.71	10.97±9.32	0.106	0.132, 0.047, 0.071, 0.064, 0.107 (0.0874, 0.39, 0.1105, 0.098, 0.002)
131	FSIQ	I	70	11.51±8.53	11.05±9.33	0.160	0.23, 0.15, 0.14, 0.133, 0.16 (0.0027, 0.0056, 0.0017, 0.0006, 0.0001)
132	FSIQ	I	100	11.37±8.79	10.85±9.38	0.216	0.245, 0.249, 0.24, 0.231, 0.217 (0.0014, 0.0001, 0.0001, 0.0001, 0.0001)
133	FSIQ	I	130	11.4±8.74	10.92±9.5	0.165	0.118, 0.088, 0.127, 0.132, 0.166 (0.128, 0.1081, 0.0043, 0.0006, 0.0001)
134	FSIQ	R	5	11.62±9.0	11.13±9.69	0.074	0.15, 0.132, 0.091, 0.077, 0.075 (0.0521, 0.0154, 0.0418, 0.0461, 0.0307)
135	FSIQ	R	10	11.9±8.94	11.31±9.47	0.036	0.054, 0.061, 0.042, 0.019, 0.037 (0.4873, 0.2695, 0.3459, 0.6366, 0.2925)
136	FSIQ	R	20	11.68±8.94	11.25±9.77	0.074	0.127, 0.037, 0.042, 0.067, 0.075 (0.1012, 0.5037, 0.3466, 0.0831, 0.031)
137	FSIQ	R	40	11.94±9.12	11.41±9.76	0.075	0.087, 0.065, 0.079, 0.068, 0.075 (0.2615, 0.2332, 0.0753, 0.0796, 0.0295)
138	FSIQ	R	70	11.62±8.79	11.08±9.46	0.122	0.099, 0.171, 0.159, 0.132, 0.123 (0.2006, 0.0017, 0.0004, 0.0006, 0.0004)
139	FSIQ	R	100	11.67±8.92	11.07±9.3	0.120	0.223, 0.176, 0.153, 0.121, 0.12 (0.0036, 0.0012, 0.0006, 0.0017, 0.0005)
140	FSIQ	R	130	11.9±9.08	11.45±9.94	0.080	0.063, 0.079, 0.059, 0.049, 0.08 (0.4199, 0.1493, 0.1901, 0.2026, 0.0204)
141	FSIQ	IR	5	11.81±9.11	11.27±9.65	0.028	0.028, 0.037, 0.066, 0.041, 0.029 (0.7177, 0.5067, 0.1414, 0.2924, 0.4097)
142	FSIQ	IR	10	11.7±8.83	11.19±9.52	0.089	0.081, 0.043, 0.065, 0.109, 0.09 (0.2972, 0.4395, 0.1487, 0.0048, 0.0093)
143	FSIQ	IR	20	11.85±9.09	11.28±9.69	0.062	0.016, 0.069, 0.06, 0.039, 0.063 (0.8416, 0.2081, 0.18, 0.3194, 0.0698)
144	FSIQ	IR	40	11.8±8.94	11.21±9.41	0.096	0.004, 0.066, 0.095, 0.091, 0.096 (0.963, 0.2281, 0.0336, 0.0184, 0.0053)
145	FSIQ	IR	70	11.51±9.0	10.97±9.59	0.128	0.136, 0.151, 0.125, 0.14, 0.128 (0.0778, 0.0056, 0.0048, 0.0003, 0.0002)
146	FSIQ	IR	100	11.76±8.87	11.12±9.21	0.093	0.079, 0.084, 0.091, 0.098, 0.094 (0.3064, 0.1239, 0.0419, 0.0107, 0.0065)
147	FSIQ	IR	130	11.58±8.8	10.96±9.2	0.124	0.008, 0.107, 0.159, 0.13, 0.125 (0.9209, 0.0499, 0.0004, 0.0008, 0.0003)

Table 4: Absolute IQ prediction performance by 2D-VGG8 in setting 2. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
148	FSIQ	I	5	11.84±8.89	11.39±9.87	0.010	0.071, 0.021, 0.081, 0.031, 0.001 (0.3593, 0.7914, 0.2991, 0.5763, 0.9946)
148	PIQ	I	5	12.14±9.58	12.1±11.59	0.001	0.041, 0.018, 0.008, 0.012, 0.008 (0.4529, 0.6882, 0.8645, 0.7882, 0.8499)
148	VIQ	I	5	12.45±9.74	12.29±11.91	0.003	0.008, -0.016, 0.011, 0.001, 0.003 (0.8538, 0.6739, 0.7644, 0.9796, 0.9398)
149	FSIQ	I	10	11.87±8.91	11.24±9.29	0.069	0.13, 0.171, 0.041, 0.016, 0.092 (0.0924, 0.0262, 0.5979, 0.7795, 0.0929)
149	PIQ	I	10	12.11±9.35	11.68±10.18	0.086	-0.065, 0.075, 0.102, -0.005, 0.064 (0.2283, 0.0937, 0.0216, 0.9073, 0.098)
149	VIQ	I	10	12.6±9.73	12.19±11.21	0.008	0.091, -0.005, 0.07, 0.086, 0.008 (0.0182, 0.8897, 0.0433, 0.0124, 0.8251)
150	FSIQ	I	20	11.84±8.74	11.29±9.43	0.072	0.135, 0.103, 0.1, 0.106, 0.094 (0.0798, 0.1855, 0.1985, 0.0516, 0.0862)
150	PIQ	I	20	11.91±9.35	11.64±10.69	0.078	0.069, 0.092, 0.102, 0.038, 0.056 (0.206, 0.0385, 0.0222, 0.4015, 0.1476)
150	VIQ	I	20	12.43±9.54	11.99±10.95	0.027	0.073, 0.013, 0.073, 0.078, 0.028 (0.0596, 0.7498, 0.0358, 0.0236, 0.429)
151	FSIQ	I	40	11.49±8.7	11.09±9.64	0.119	0.21, 0.166, 0.167, 0.127, 0.083 (0.0062, 0.0307, 0.0299, 0.0197, 0.131)
151	PIQ	I	40	11.78±9.33	11.7±11.05	0.079	0.146, 0.155, 0.108, 0.168, 0.113 (0.0074, 0.0005, 0.0154, 0.0002, 0.0034)
151	VIQ	I	40	12.16±9.32	11.88±11.15	0.084	0.084, 0.113, 0.119, 0.079, 0.085 (0.0296, 0.0034, 0.0006, 0.0213, 0.0142)
152	FSIQ	I	70	11.47±8.78	10.9±9.27	0.146	0.187, 0.145, 0.154, 0.133, 0.11 (0.0149, 0.0608, 0.0456, 0.0142, 0.0435)
152	PIQ	I	70	11.7±9.16	11.54±10.71	0.147	0.136, 0.162, 0.134, 0.15, 0.133 (0.0125, 0.0003, 0.0026, 0.0007, 0.0006)
152	VIQ	I	70	12.17±9.31	11.68±10.49	0.108	0.131, 0.127, 0.147, 0.148, 0.108 (0.0007, 0.001, 0.0001, 0.0001, 0.0017)
153	FSIQ	I	100	11.54±8.86	11.12±9.77	0.125	0.16, 0.161, 0.126, 0.117, 0.111 (0.0374, 0.0371, 0.1033, 0.0314, 0.0414)
153	PIQ	I	100	11.74±9.43	11.63±11.09	0.111	0.086, 0.158, 0.139, 0.126, 0.125 (0.1137, 0.0004, 0.0017, 0.0047, 0.0012)
153	VIQ	I	100	12.14±9.57	11.89±11.34	0.097	0.12, 0.09, 0.125, 0.111, 0.098 (0.0019, 0.0193, 0.0003, 0.0013, 0.0047)
154	FSIQ	I	130	11.36±8.75	10.88±9.52	0.161	0.151, 0.087, 0.173, 0.105, 0.088 (0.0497, 0.2599, 0.0246, 0.0537, 0.1057)
154	PIQ	I	130	11.62±9.31	11.47±10.99	0.132	0.093, 0.146, 0.111, 0.127, 0.142 (0.0899, 0.001, 0.0125, 0.0042, 0.0003)
154	VIQ	I	130	12.1±9.24	11.68±10.66	0.123	0.113, 0.113, 0.162, 0.132, 0.124 (0.0032, 0.0034, 0.0001, 0.0002, 0.0004)
155	FSIQ	R	5	11.86±8.89	11.28±9.45	0.050	0.101, 0.068, 0.063, 0.011, -0.012 (0.1925, 0.38, 0.4184, 0.85, 0.8226)
155	PIQ	R	5	12.17±9.33	11.97±10.81	0.021	0.011, 0.007, 0.002, -0.006, 0.061 (0.8463, 0.8791, 0.966, 0.8784, 0.1137)
155	VIQ	R	5	12.41±9.48	12.03±11.09	0.038	0.03, 0.057, 0.051, 0.021, 0.039 (0.437, 0.1391, 0.1448, 0.5488, 0.2662)
156	FSIQ	R	10	11.81±9.1	11.07±9.21	0.045	0.154, 0.111, 0.14, 0.104, 0.099 (0.0453, 0.1504, 0.0705, 0.056, 0.07)
156	PIQ	R	10	12.07±9.51	11.7±10.54	0.032	0.079, 0.064, 0.064, 0.047, 0.022 (0.1487, 0.1504, 0.1522, 0.2898, 0.5802)
156	VIQ	R	10	12.44±9.5	11.77±10.4	0.035	0.023, 0.024, 0.046, 0.033, 0.036 (0.5628, 0.5485, 0.1874, 0.3504, 0.3055)
157	FSIQ	R	20	11.83±8.95	11.14±9.2	0.093	-0.032, -0.062, 0.034, 0.036, 0.059 (0.6716, 0.4196, 0.6674, 0.5194, 0.282)

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Table 4 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
157	PIQ	R	20	11.97±9.33	11.65±10.44	0.094	0.012, 0.049, 0.055, 0.029, 0.087 (0.8322, 0.2707, 0.2228, 0.5228, 0.0234)
157	VIQ	R	20	12.42±9.46	11.98±10.96	0.058	0.082, 0.069, 0.093, 0.094, 0.058 (0.0338, 0.0724, 0.0069, 0.0063, 0.0928)
158	FSIQ	R	40	11.83±9.05	11.26±9.56	0.063	0.052, 0.036, 0.063, 0.064, 0.067 (0.502, 0.6463, 0.4206, 0.2406, 0.2221)
158	PIQ	R	40	11.98±9.54	11.74±10.96	0.068	0.046, 0.056, 0.094, 0.036, 0.082 (0.4051, 0.211, 0.0346, 0.4282, 0.0338)
158	VIQ	R	40	12.38±9.64	11.89±10.83	0.048	0.096, 0.058, 0.064, 0.068, 0.049 (0.0127, 0.1355, 0.0657, 0.0479, 0.1592)
159	FSIQ	R	70	11.71±8.81	11.25±9.66	0.155	0.201, 0.181, 0.145, 0.127, 0.1 (0.0088, 0.0188, 0.0603, 0.0192, 0.0667)
159	PIQ	R	70	11.78±9.37	11.63±10.96	0.163	0.111, 0.13, 0.136, 0.077, 0.132 (0.0427, 0.0034, 0.0023, 0.0863, 0.0007)
159	VIQ	R	70	12.45±9.49	12.0±10.95	0.091	0.135, 0.077, 0.156, 0.164, 0.092 (0.0005, 0.0456, 0.0001, 0.0001, 0.0078)
160	FSIQ	R	100	11.76±8.98	11.21±9.57	0.069	-0.009, -0.061, 0.019, 0.067, 0.033 (0.8979, 0.4248, 0.8149, 0.2241, 0.5454)
160	PIQ	R	100	12.0±9.55	11.78±10.98	0.049	0.064, 0.056, 0.038, 0.042, 0.074 (0.2418, 0.2117, 0.398, 0.3514, 0.0552)
160	VIQ	R	100	12.23±9.63	11.85±11.05	0.055	0.051, 0.057, 0.069, 0.049, 0.056 (0.1903, 0.144, 0.0446, 0.1569, 0.1061)
161	FSIQ	R	130	12.12±9.3	11.44±9.6	0.051	-0.058, -0.013, -0.088, 0.061, 0.072 (0.4473, 0.8618, 0.249, 0.2625, 0.1907)
161	PIQ	R	130	12.1±9.49	11.82±10.7	0.075	-0.002, 0.046, 0.062, -0.009, 0.036 (0.9652, 0.3091, 0.1687, 0.8333, 0.3593)
161	VIQ	R	130	12.6±9.85	12.07±11.04	0.030	0.077, -0.009, 0.052, 0.075, 0.03 (0.0459, 0.7983, 0.1368, 0.0298, 0.39)
162	FSIQ	IR	5	11.64±9.09	11.14±9.83	0.080	0.051, 0.089, 0.003, 0.136, 0.123 (0.5134, 0.2511, 0.975, 0.0126, 0.0244)
162	PIQ	IR	5	11.81±9.58	11.57±10.89	0.071	0.081, 0.101, 0.111, 0.057, 0.068 (0.1401, 0.0236, 0.0126, 0.2056, 0.0788)
162	VIQ	IR	5	12.44±9.5	12.11±11.32	0.061	0.082, 0.04, 0.08, 0.071, 0.062 (0.033, 0.3015, 0.0204, 0.0396, 0.0751)
163	FSIQ	IR	10	11.64±8.92	11.12±9.63	0.080	0.06, 0.085, -0.007, 0.064, 0.107 (0.442, 0.2705, 0.927, 0.2445, 0.0499)
163	PIQ	IR	10	11.95±9.37	11.73±10.77	0.066	0.006, 0.058, 0.087, 0.003, 0.072 (0.914, 0.1941, 0.0519, 0.9603, 0.0617)
163	VIQ	IR	10	12.23±9.43	11.86±11.02	0.075	0.062, 0.058, 0.08, 0.066, 0.075 (0.109, 0.1318, 0.0201, 0.0545, 0.0291)
164	FSIQ	IR	20	11.87±8.95	11.32±9.54	0.053	0.107, 0.11, 0.091, 0.03, 0.058 (0.1684, 0.1553, 0.2432, 0.5839, 0.2895)
164	PIQ	IR	20	12.09±9.57	11.85±10.87	0.006	0.006, 0.061, 0.047, 0.055, 0.056 (0.915, 0.1741, 0.2973, 0.2151, 0.1498)
164	VIQ	IR	20	12.6±9.29	12.08±10.48	0.047	0.04, 0.029, 0.053, 0.007, 0.047 (0.308, 0.462, 0.1237, 0.854, 0.1743)
165	FSIQ	IR	40	11.72±8.75	11.05±9.07	0.088	0.089, 0.107, 0.018, 0.094, 0.104 (0.2505, 0.1676, 0.8219, 0.0837, 0.0566)
165	PIQ	IR	40	11.87±9.3	11.52±10.39	0.073	0.042, 0.071, 0.07, 0.024, 0.096 (0.4497, 0.1095, 0.1163, 0.5953, 0.0125)
165	VIQ	IR	40	12.49±9.25	11.88±10.29	0.039	0.09, 0.049, 0.088, 0.073, 0.04 (0.0193, 0.203, 0.0104, 0.0338, 0.2542)
166	FSIQ	IR	70	11.59±8.82	11.09±9.47	0.152	0.127, 0.174, 0.045, 0.103, 0.144 (0.1008, 0.0234, 0.5685, 0.06, 0.0081)
166	PIQ	IR	70	11.83±9.32	11.59±10.7	0.138	0.034, 0.099, 0.122, 0.04, 0.135 (0.5331, 0.0255, 0.0062, 0.3703, 0.0005)
166	VIQ	IR	70	12.2±9.5	11.76±10.64	0.112	0.132, 0.096, 0.152, 0.138, 0.112 (0.0007, 0.0124, 0.0001, 0.0001, 0.0011)
167	FSIQ	IR	100	11.87±8.94	11.36±9.7	0.083	0.152, 0.174, 0.072, 0.152, 0.161 (0.0483, 0.0235, 0.3573, 0.0053, 0.0031)
167	PIQ	IR	100	11.94±9.41	11.81±11.04	0.089	0.082, 0.126, 0.137, 0.061, 0.088 (0.1317, 0.0046, 0.0021, 0.1738, 0.0232)
167	VIQ	IR	100	12.4±9.74	12.04±11.36	0.058	0.104, 0.05, 0.083, 0.089, 0.058 (0.0071, 0.1957, 0.0159, 0.0099, 0.0929)
168	FSIQ	IR	130	11.51±8.67	10.89±9.09	0.199	0.154, 0.151, 0.134, 0.126, 0.117 (0.0459, 0.0504, 0.0838, 0.0209, 0.0318)
168	PIQ	IR	130	11.73±9.42	11.42±10.52	0.165	0.118, 0.138, 0.116, 0.114, 0.153 (0.0301, 0.0019, 0.0091, 0.0106, 0.0001)

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Table 4 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
168	VIQ	IR	130	12.03±9.5	11.55±10.8	0.160	0.121, 0.136, 0.199, 0.165, 0.161 (0.0018, 0.0004, 0.0001, 0.0001, 0.0001)

Table 5: Residual IQ prediction performance by 2D-ResNet18 in setting 1. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
169	PIQ	I	5	10.94±9.05	108.75±69.45	0.140	0.232, 0.142, 0.124, 0.136, 0.141 (0.0025, 0.0088, 0.0054, 0.0005, 0.0001)
170	PIQ	I	10	11.02±8.99	101.29±42.75	0.119	0.08, 0.105, 0.124, 0.115, 0.119 (0.3033, 0.0537, 0.0054, 0.0029, 0.0006)
171	PIQ	I	20	11.06±8.94	102.8±45.69	0.115	0.185, 0.126, 0.129, 0.125, 0.116 (0.0163, 0.0205, 0.0037, 0.0012, 0.0008)
172	PIQ	I	40	11.05±8.96	99.79±35.89	0.114	0.081, 0.089, 0.113, 0.117, 0.115 (0.2954, 0.1046, 0.0112, 0.0024, 0.0009)
173	PIQ	I	70	11.07±9.01	96.47±31.22	0.076	0.015, 0.082, 0.108, 0.083, 0.077 (0.852, 0.1326, 0.0156, 0.0319, 0.0258)
174	PIQ	I	100	11.07±9.01	95.83±23.27	0.088	0.077, 0.052, 0.08, 0.088, 0.089 (0.3203, 0.348, 0.0724, 0.0226, 0.0102)
175	PIQ	I	130	11.09±9.03	95.32±21.96	0.036	0.095, -0.006, 0.021, 0.024, 0.036 (0.2216, 0.9034, 0.6387, 0.534, 0.2997)
176	PIQ	R	5	11.05±8.98	103.72±48.49	0.105	0.068, 0.083, 0.077, 0.083, 0.106 (0.3792, 0.1285, 0.0835, 0.0323, 0.0021)
177	PIQ	R	10	10.98±8.97	102.89±49.43	0.137	0.152, 0.117, 0.112, 0.107, 0.138 (0.0481, 0.0314, 0.0122, 0.0054, 0.0001)
178	PIQ	R	20	11.08±9.01	97.92±30.47	0.065	0.08, 0.058, 0.084, 0.069, 0.066 (0.3052, 0.2878, 0.0584, 0.0726, 0.0565)
179	PIQ	R	40	11.08±8.96	106.89±57.93	0.110	0.164, 0.101, 0.058, 0.078, 0.11 (0.0336, 0.0647, 0.1975, 0.0428, 0.0014)
180	PIQ	R	70	10.94±9.02	98.48±42.7	0.138	0.197, 0.16, 0.116, 0.131, 0.138 (0.0102, 0.0032, 0.0091, 0.0007, 0.0001)
181	PIQ	R	100	10.91±8.99	108.86±88.1	0.162	0.206, 0.143, 0.107, 0.175, 0.163 (0.0071, 0.0084, 0.0165, 0.0001, 0.0001)
182	PIQ	R	130	10.96±9.07	103.11±58.97	0.117	0.122, 0.086, 0.094, 0.131, 0.117 (0.1142, 0.1174, 0.0345, 0.0007, 0.0007)
183	PIQ	IR	5	11.06±9.01	97.21±28.81	0.088	0.117, 0.075, 0.096, 0.095, 0.088 (0.1317, 0.1677, 0.0313, 0.0139, 0.0104)
184	PIQ	IR	10	11.04±9.23	108.85±79.53	0.083	0.178, 0.074, 0.071, 0.058, 0.083 (0.0204, 0.1766, 0.1103, 0.1315, 0.0159)
185	PIQ	IR	20	11.08±9.13	103.06±46.61	0.043	0.091, 0.011, 0.024, 0.026, 0.044 (0.2389, 0.843, 0.6026, 0.5085, 0.2069)
186	PIQ	IR	40	11.04±9.14	101.76±46.62	0.063	0.155, -0.04, -0.005, 0.035, 0.063 (0.0444, 0.4535, 0.9078, 0.3755, 0.0675)
187	PIQ	IR	70	11.02±9.04	105.14±61.51	0.106	0.165, 0.114, 0.102, 0.109, 0.107 (0.0324, 0.0367, 0.0222, 0.0048, 0.002)
188	PIQ	IR	100	10.94±9.07	116.11±104.17	0.157	0.216, 0.168, 0.146, 0.176, 0.157 (0.0049, 0.0021, 0.0011, 0.0001, 0.0001)
189	PIQ	IR	130	10.93±9.09	109.43±95.85	0.143	0.172, 0.121, 0.095, 0.161, 0.144 (0.0253, 0.0267, 0.0336, 0.0001, 0.0001)

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Table 5 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
190	VIQ	I	5	11.16±8.99	99.11±39.47	0.146	0.213, 0.162, 0.151, 0.137, 0.146 (0.0055, 0.0028, 0.0007, 0.0004, 0.0001)
191	VIQ	I	10	11.23±9.03	96.02±26.63	0.107	0.165, 0.115, 0.094, 0.084, 0.107 (0.0317, 0.0351, 0.0346, 0.0299, 0.0019)
192	VIQ	I	20	11.25±9.03	94.23±23.38	0.098	0.163, 0.072, 0.175, 0.113, 0.099 (0.0345, 0.1897, 0.0001, 0.0035, 0.0043)
193	VIQ	I	40	11.19±9.0	96.55±29.44	0.141	0.146, 0.086, 0.184, 0.137, 0.141 (0.0578, 0.1153, 0.0001, 0.0004, 0.0001)
194	VIQ	I	70	11.24±9.02	99.84±36.99	0.095	0.079, 0.09, 0.083, 0.079, 0.095 (0.3077, 0.0992, 0.0619, 0.0415, 0.0058)
195	VIQ	I	100	11.19±9.04	101.41±49.99	0.119	0.166, 0.134, 0.114, 0.103, 0.12 (0.0308, 0.014, 0.0106, 0.0074, 0.0006)
196	VIQ	I	130	11.24±8.97	98.49±30.62	0.121	0.119, 0.117, 0.146, 0.115, 0.121 (0.124, 0.0312, 0.001, 0.0028, 0.0005)
197	VIQ	R	5	11.18±8.99	102.85±48.59	0.136	0.129, 0.091, 0.112, 0.127, 0.136 (0.0937, 0.096, 0.012, 0.001, 0.0001)
198	VIQ	R	10	11.22±9.08	103.3±54.0	0.085	0.065, 0.06, 0.07, 0.068, 0.085 (0.402, 0.2772, 0.1164, 0.0766, 0.0135)
199	VIQ	R	20	11.21±9.06	106.46±70.12	0.107	0.165, 0.161, 0.126, 0.099, 0.107 (0.0326, 0.0031, 0.0046, 0.0103, 0.0019)
200	VIQ	R	40	11.21±9.03	104.75±61.65	0.114	0.058, 0.114, 0.113, 0.103, 0.114 (0.4559, 0.0358, 0.011, 0.0078, 0.001)
201	VIQ	R	70	11.21±9.0	105.33±57.71	0.120	0.167, 0.189, 0.149, 0.117, 0.121 (0.0299, 0.0005, 0.0008, 0.0024, 0.0005)
202	VIQ	R	100	11.24±9.1	106.32±70.99	0.082	0.137, 0.118, 0.096, 0.086, 0.083 (0.0758, 0.0301, 0.0318, 0.026, 0.0168)
203	VIQ	R	130	11.25±9.0	104.0±49.61	0.105	0.04, 0.087, 0.103, 0.092, 0.106 (0.6079, 0.1099, 0.0206, 0.0166, 0.0022)
204	VIQ	IR	5	11.24±8.98	99.78±31.67	0.108	0.105, 0.084, 0.071, 0.105, 0.109 (0.1755, 0.1238, 0.1141, 0.0066, 0.0016)
205	VIQ	IR	10	11.17±8.97	106.92±66.35	0.143	0.191, 0.154, 0.118, 0.106, 0.144 (0.0131, 0.0046, 0.0079, 0.0059, 0.0001)
206	VIQ	IR	20	11.26±8.97	111.29±99.32	0.123	0.19, 0.138, 0.109, 0.136, 0.123 (0.0134, 0.0109, 0.0143, 0.0005, 0.0004)
207	VIQ	IR	40	11.24±9.0	96.59±27.15	0.120	0.029, 0.063, 0.064, 0.066, 0.121 (0.716, 0.2485, 0.1498, 0.0883, 0.0005)
208	VIQ	IR	70	11.25±9.09	97.59±37.87	0.052	-0.018, 0.008, 0.014, 0.009, 0.052 (0.8068, 0.8882, 0.7547, 0.826, 0.1321)
209	VIQ	IR	100	11.22±9.12	106.15±79.37	0.094	0.011, 0.023, 0.018, 0.002, 0.094 (0.8922, 0.6756, 0.6904, 0.9743, 0.0062)
210	VIQ	IR	130	11.21±9.09	98.18±41.85	0.078	0.035, 0.054, 0.003, 0.036, 0.078 (0.6579, 0.3284, 0.9565, 0.3563, 0.0231)
211	FSIQ	I	5	10.63±8.41	97.36±32.91	0.128	0.134, 0.05, 0.118, 0.137, 0.129 (0.0833, 0.3598, 0.0082, 0.0004, 0.0002)
212	FSIQ	I	10	10.64±8.4	101.6±51.29	0.123	0.175, 0.105, 0.145, 0.125, 0.123 (0.0228, 0.0535, 0.0011, 0.0012, 0.0004)
213	FSIQ	I	20	10.62±8.35	100.88±46.5	0.138	0.157, 0.119, 0.116, 0.114, 0.139 (0.0422, 0.0294, 0.0092, 0.0032, 0.0001)
214	FSIQ	I	40	10.64±8.39	101.31±40.87	0.127	0.148, 0.065, 0.087, 0.092, 0.128 (0.0545, 0.2329, 0.0523, 0.0173, 0.0003)
215	FSIQ	I	70	10.63±8.43	96.11±26.21	0.129	0.163, 0.1, 0.163, 0.15, 0.129 (0.0339, 0.0664, 0.0003, 0.0001, 0.0002)
216	FSIQ	I	100	10.62±8.47	101.09±51.61	0.099	0.074, 0.057, 0.125, 0.09, 0.1 (0.3383, 0.3006, 0.005, 0.0195, 0.0038)
217	FSIQ	I	130	10.63±8.4	97.41±30.78	0.137	0.129, 0.122, 0.142, 0.132, 0.138 (0.0958, 0.0248, 0.0014, 0.0006, 0.0001)
218	FSIQ	R	5	10.68±8.5	102.44±56.26	0.059	0.045, 0.036, 0.043, 0.051, 0.059 (0.5679, 0.5134, 0.3331, 0.1843, 0.0877)
219	FSIQ	R	10	10.64±8.48	99.37±41.63	0.081	0.0, 0.037, 0.026, 0.055, 0.081 (0.9995, 0.4985, 0.5683, 0.1525, 0.0183)
220	FSIQ	R	20	10.59±8.54	101.49±61.0	0.098	0.012, 0.057, 0.048, 0.067, 0.098 (0.8778, 0.3011, 0.2868, 0.0847, 0.0044)
221	FSIQ	R	40	10.62±8.49	104.5±55.47	0.099	0.173, 0.118, 0.105, 0.098, 0.099 (0.0249, 0.0306, 0.0182, 0.0113, 0.0041)
222	FSIQ	R	70	10.63±8.5	101.46±50.92	0.084	0.094, 0.075, 0.107, 0.102, 0.084 (0.2243, 0.1695, 0.0161, 0.0083, 0.0149)
223	FSIQ	R	100	10.62±8.51	99.36±38.93	0.078	0.005, 0.038, 0.071, 0.089, 0.079 (0.9538, 0.4943, 0.1138, 0.0215, 0.0228)

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Table 5 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
224	FSIQ	R	130	10.63±8.48	98.72±38.19	0.104	0.167, 0.122, 0.113, 0.114, 0.105 (0.0301, 0.0256, 0.0108, 0.003, 0.0024)
225	FSIQ	IR	5	10.63±8.51	104.27±57.28	0.085	0.102, 0.081, 0.085, 0.065, 0.086 (0.1858, 0.1391, 0.057, 0.0953, 0.0132)
226	FSIQ	IR	10	10.64±8.48	102.75±54.78	0.089	0.087, 0.058, 0.062, 0.066, 0.09 (0.2635, 0.2876, 0.1659, 0.0897, 0.0093)
227	FSIQ	IR	20	10.67±8.45	98.43±36.56	0.080	0.088, 0.029, 0.046, 0.066, 0.08 (0.2566, 0.602, 0.302, 0.0855, 0.02)
228	FSIQ	IR	40	10.47±8.39	106.81±70.64	0.186	0.104, 0.156, 0.21, 0.196, 0.186 (0.1776, 0.0042, 0.0001, 0.0001, 0.0001)
229	FSIQ	IR	70	10.67±8.46	97.67±27.41	0.066	0.101, 0.132, 0.133, 0.055, 0.067 (0.1914, 0.0154, 0.0028, 0.1548, 0.054)
230	FSIQ	IR	100	10.6±8.57	103.24±62.97	0.081	0.068, 0.057, 0.058, 0.075, 0.081 (0.3851, 0.2963, 0.198, 0.0532, 0.0184)
231	FSIQ	IR	130	10.65±8.49	102.78±52.05	0.086	0.102, 0.119, 0.109, 0.084, 0.086 (0.189, 0.0292, 0.0142, 0.0287, 0.0125)

Table 6: Residual IQ prediction performance by 2D-ResNet18 in setting 2. MAE and correlation coefficient r are averaged over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
232	FSIQ	I	5	10.63±8.37	105.9±70.07	0.137	0.142, 0.145, 0.124, 0.086, 0.082 (0.0666, 0.0594, 0.1095, 0.1165, 0.134)
232	PIQ	I	5	11.12±8.9	111.38±63.2	0.113	0.066, 0.106, 0.107, 0.095, 0.136 (0.2288, 0.0176, 0.016, 0.0326, 0.0004)
232	VIQ	I	5	11.24±8.92	100.63±42.96	0.132	0.118, 0.126, 0.137, 0.114, 0.132 (0.0022, 0.0011, 0.0001, 0.001, 0.0002)
233	FSIQ	I	10	10.68±8.4	99.8±36.18	0.100	0.093, 0.109, 0.03, -0.014, -0.001 (0.2323, 0.16, 0.7048, 0.7849, 0.9818)
233	PIQ	I	10	11.07±9.04	100.24±45.11	0.067	-0.022, 0.07, 0.049, 0.05, 0.072 (0.6729, 0.118, 0.2716, 0.2689, 0.0642)
233	VIQ	I	10	11.27±9.05	95.35±25.89	0.055	0.051, 0.017, 0.1, 0.067, 0.056 (0.1878, 0.6635, 0.0037, 0.0525, 0.1087)
234	FSIQ	I	20	10.64±8.38	98.83±38.63	0.122	0.089, 0.04, 0.096, 0.072, 0.052 (0.2521, 0.6053, 0.2133, 0.1904, 0.3481)
234	PIQ	I	20	11.06±8.98	98.82±30.31	0.100	0.072, 0.139, 0.133, 0.122, 0.13 (0.1903, 0.0018, 0.0028, 0.006, 0.0008)
234	VIQ	I	20	11.25±8.96	99.23±40.44	0.113	0.116, 0.107, 0.123, 0.1, 0.113 (0.0025, 0.0053, 0.0004, 0.0037, 0.001)
235	FSIQ	I	40	10.7±8.39	103.09±42.17	0.091	0.086, 0.049, 0.047, 0.043, 0.039 (0.2697, 0.5276, 0.5473, 0.4391, 0.4767)
235	PIQ	I	40	11.09±9.02	95.92±24.84	0.046	0.015, 0.064, 0.048, 0.018, 0.073 (0.7868, 0.154, 0.2804, 0.6884, 0.0573)
235	VIQ	I	40	11.28±9.03	96.49±28.0	0.063	0.047, 0.026, 0.092, 0.047, 0.063 (0.2303, 0.4997, 0.0078, 0.1783, 0.068)
236	FSIQ	I	70	10.67±8.41	96.98±28.01	0.099	0.108, 0.038, 0.16, 0.041, 0.01 (0.1635, 0.6284, 0.0384, 0.4518, 0.8569)
236	PIQ	I	70	11.11±9.0	96.92±25.33	0.041	0.12, 0.078, 0.017, 0.121, 0.077 (0.0275, 0.0812, 0.7058, 0.0064, 0.0464)

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Table 6 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
236	VIQ	I	70	11.26±9.0	96.3±26.86	0.097	0.021, 0.085, 0.1, 0.041, 0.098 (0.6008, 0.028, 0.0039, 0.2365, 0.0046)
237	FSIQ	I	100	10.7±8.44	99.96±38.1	0.067	-0.032, 0.058, -0.036, 0.01, -0.01 (0.6746, 0.4532, 0.6354, 0.8604, 0.8476)
237	PIQ	I	100	11.11±9.03	97.71±30.7	0.039	0.06, 0.009, -0.023, 0.054, 0.015 (0.2738, 0.8513, 0.6001, 0.2313, 0.714)
237	VIQ	I	100	11.21±9.09	96.22±34.84	0.081	-0.023, 0.058, 0.068, 0.039, 0.081 (0.5325, 0.1322, 0.0495, 0.2575, 0.0186)
238	FSIQ	I	130	10.67±8.43	96.23±28.09	0.088	0.124, 0.032, 0.13, 0.092, 0.028 (0.11, 0.6801, 0.0935, 0.0911, 0.6145)
238	PIQ	I	130	11.13±8.99	97.15±27.33	0.039	0.107, 0.107, 0.026, 0.108, 0.078 (0.0503, 0.0164, 0.5593, 0.0151, 0.0439)
238	VIQ	I	130	11.27±9.04	96.54±26.83	0.056	0.033, 0.058, 0.089, 0.039, 0.056 (0.3917, 0.1329, 0.0103, 0.2599, 0.103)
239	FSIQ	R	5	10.67±8.41	106.99±57.77	0.102	0.182, 0.185, 0.107, 0.126, 0.135 (0.0177, 0.016, 0.1663, 0.0204, 0.0134)
239	PIQ	R	5	11.12±8.95	101.8±40.76	0.080	0.035, 0.1, 0.082, 0.063, 0.105 (0.5247, 0.0244, 0.0675, 0.1591, 0.0064)
239	VIQ	R	5	11.28±8.98	98.84±30.16	0.084	0.089, 0.071, 0.102, 0.081, 0.085 (0.0208, 0.0672, 0.0031, 0.0191, 0.014)
240	FSIQ	R	10	10.67±8.48	103.48±56.58	0.086	0.082, 0.092, 0.081, 0.07, 0.087 (0.2879, 0.234, 0.2979, 0.1995, 0.1121)
240	PIQ	R	10	11.12±9.0	100.04±35.02	0.051	0.054, 0.037, 0.059, 0.008, 0.069 (0.3254, 0.4058, 0.1895, 0.8623, 0.0726)
240	VIQ	R	10	11.26±9.08	99.75±37.88	0.054	0.035, 0.016, 0.086, 0.051, 0.055 (0.3744, 0.6807, 0.0123, 0.1413, 0.1147)
241	FSIQ	R	20	10.66±8.53	107.29±61.39	0.079	0.039, 0.09, -0.012, 0.102, 0.129 (0.6146, 0.2432, 0.8747, 0.0606, 0.0177)
241	PIQ	R	20	11.09±8.95	106.08±55.99	0.104	0.031, 0.081, 0.106, -0.004, 0.079 (0.5804, 0.069, 0.017, 0.9211, 0.0408)
241	VIQ	R	20	11.26±9.11	94.9±25.06	0.015	0.116, 0.016, 0.079, 0.104, 0.015 (0.0026, 0.6933, 0.022, 0.0026, 0.6646)
242	FSIQ	R	40	10.63±8.37	106.11±53.77	0.086	-0.004, 0.023, 0.156, 0.125, 0.104 (0.9544, 0.7685, 0.0435, 0.0221, 0.0569)
242	PIQ	R	40	10.78±8.97	99.4±32.64	0.082	0.095, 0.086, 0.083, 0.057, 0.079 (0.083, 0.0536, 0.0631, 0.2012, 0.0543)
242	VIQ	R	40	11.57±9.22	101.53±45.42	0.057	0.082, 0.058, 0.083, 0.069, 0.065 (0.3049, 0.2832, 0.0581, 0.0723, 0.0555)
243	FSIQ	R	70	10.28±8.5	111.13±62.22	0.050	0.061, -0.014, 0.048, 0.051, 0.021 (0.4301, 0.8504, 0.5374, 0.3555, 0.6998)
243	PIQ	R	70	11.15±9.31	114.32±65.1	0.021	0.012, 0.006, 0.003, -0.005, 0.064 (0.8464, 0.8791, 0.967, 0.8784, 0.1138)
243	VIQ	R	70	11.29±8.79	100.88±40.92	0.035	0.055, 0.062, 0.041, 0.019, 0.036 (0.4874, 0.2654, 0.3455, 0.6354, 0.2964)
244	FSIQ	R	100	9.9±8.55	96.02±19.22	0.119	0.119, 0.127, 0.082, 0.087, 0.137, (0.1225, 0.0991, 0.2932, 0.5841, 0.3023)
244	PIQ	R	100	10.69±9.48	95.86±19.82	0.127	0.135, 0.06, 0.115, 0.137, 0.129 (0.0835, 0.3544, 0.0083, 0.0004, 0.0001)
244	VIQ	R	100	11.32±9.18	96.83±21.0	0.081	0.033, 0.055, 0.003, 0.036, 0.067 (0.6579, 0.3254, 0.9565, 0.3554, 0.0231)
245	FSIQ	R	130	10.63±8.49	102.03±52.29	0.084	0.109, -0.182, 0.045, 0.061, -0.001 (0.1581, 0.0173, 0.561, 0.2644, 0.9831)
245	PIQ	R	130	11.11±9.08	102.28±40.63	0.042	0.06, 0.082, 0.015, 0.07, 0.094 (0.2748, 0.0667, 0.7481, 0.1187, 0.0152)
245	VIQ	R	130	11.25±9.05	99.55±45.68	0.074	0.056, 0.071, 0.085, 0.043, 0.074 (0.1478, 0.0674, 0.014, 0.2178, 0.0313)
246	FSIQ	IR	5	10.71±8.48	104.46±47.06	0.051	0.128, 0.087, 0.137, 0.021, 0.034 (0.0967, 0.2619, 0.0755, 0.7109, 0.544)
246	PIQ	IR	5	11.13±9.05	99.74±39.97	0.016	0.049, 0.024, 0.055, 0.025, 0.04 (0.3721, 0.59, 0.2234, 0.5841, 0.3023)
246	VIQ	IR	5	11.3±9.03	102.61±42.36	0.056	0.019, 0.04, 0.051, 0.017, 0.056 (0.6254, 0.3035, 0.1402, 0.6312, 0.1034)
247	FSIQ	IR	10	10.63±8.45	100.75±46.04	0.098	0.102, 0.101, 0.023, 0.069, 0.036 (0.1887, 0.1912, 0.7726, 0.2072, 0.5121)
247	PIQ	IR	10	11.09±9.13	102.89±55.23	0.046	0.04, 0.071, 0.027, 0.013, 0.099 (0.4677, 0.1099, 0.5434, 0.7799, 0.0106)
247	VIQ	IR	10	11.28±9.04	99.22±42.34	0.063	0.05, 0.05, 0.098, 0.046, 0.064 (0.1959, 0.1974, 0.0043, 0.1833, 0.0654)

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Table 6 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
248	FSIQ	IR	20	10.59±8.46	101.32±56.2	0.116	0.008, 0.053, 0.026, 0.092, 0.023 (0.9227, 0.4949, 0.7405, 0.093, 0.6793)
248	PIQ	IR	20	11.08±9.01	104.09±62.6	0.085	0.03, 0.109, 0.074, 0.089, 0.076 (0.5897, 0.0138, 0.0996, 0.0466, 0.0499)
248	VIQ	IR	20	11.29±8.95	109.08±78.76	0.109	0.05, 0.068, 0.116, 0.086, 0.11 (0.1994, 0.0779, 0.0008, 0.0129, 0.0015)
249	FSIQ	IR	40	10.56±8.56	111.03±98.82	0.135	-0.007, 0.014, 0.124, 0.018, 0.089 (0.92, 0.8658, 0.1078, 0.747, 0.1029)
249	PIQ	IR	40	11.07±9.0	110.09±83.91	0.111	0.105, 0.111, 0.109, 0.107, 0.099 (0.0545, 0.0126, 0.0139, 0.0164, 0.0104)
249	VIQ	IR	40	11.23±8.97	113.16±96.44	0.129	0.099, 0.088, 0.135, 0.111, 0.13 (0.0101, 0.0233, 0.0001, 0.0013, 0.0002)
250	FSIQ	IR	70	10.67±8.4	105.05±56.52	0.097	0.045, 0.05, 0.014, 0.087, 0.054 (0.5663, 0.5183, 0.8621, 0.1115, 0.3263)
250	PIQ	IR	70	11.06±9.02	99.57±32.47	0.080	-0.029, 0.108, 0.079, 0.084, 0.102 (0.5915, 0.0156, 0.0782, 0.0604, 0.0084)
250	VIQ	IR	70	11.31±9.03	96.69±24.83	0.033	0.071, 0.04, 0.098, 0.08, 0.034 (0.0651, 0.3092, 0.0046, 0.0203, 0.3335)
251	FSIQ	IR	100	10.65±8.43	108.64±74.0	0.124	0.07, 0.152, -0.151, 0.007, 0.112 (0.3691, 0.0485, 0.0493, 0.9048, 0.0394)
251	PIQ	IR	100	11.12±9.03	112.74±82.88	0.095	-0.072, 0.08, 0.045, 0.085, 0.089 (0.1816, 0.0718, 0.3171, 0.0552, 0.0216)
251	VIQ	IR	100	11.23±9.01	103.66±62.96	0.107	0.076, 0.07, 0.124, 0.095, 0.107 (0.0492, 0.0693, 0.0004, 0.0057, 0.0018)
252	FSIQ	IR	130	10.65±8.4	99.4±43.12	0.100	0.061, 0.067, 0.057, 0.088, 0.049 (0.4304, 0.3878, 0.4605, 0.1083, 0.3769)
252	PIQ	IR	130	11.07±9.03	100.69±36.35	0.070	0.068, 0.127, 0.081, 0.092, 0.112 (0.2134, 0.0042, 0.0707, 0.0398, 0.0036)
252	VIQ	IR	130	11.23±9.01	98.95±31.37	0.103	0.081, 0.092, 0.101, 0.07, 0.103 (0.0348, 0.0166, 0.0035, 0.0428, 0.0027)

Table 7: Residual IQ prediction performance by 2D-VGG8 in setting 1. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
253	PIQ	I	5	11.01±9.04	100.36±40.99	0.097	0.109, 0.079, 0.066, 0.082, 0.097 (0.1577, 0.1488, 0.1396, 0.0338, 0.0048)
254	PIQ	I	10	11.04±9.0	98.23±36.13	0.101	0.088, 0.042, 0.064, 0.112, 0.102 (0.2553, 0.4498, 0.1514, 0.0036, 0.0032)
255	PIQ	I	20	11.09±9.03	95.49±21.22	0.060	0.086, 0.022, 0.07, 0.075, 0.06 (0.2683, 0.6867, 0.1157, 0.0513, 0.0806)
256	PIQ	I	40	11.09±9.02	95.29±21.36	0.067	0.145, 0.076, 0.07, 0.069, 0.068 (0.0598, 0.164, 0.1149, 0.0735, 0.0499)
257	PIQ	I	70	11.1±9.02	95.61±20.71	0.057	0.072, 0.061, 0.044, 0.043, 0.058 (0.3533, 0.2659, 0.3221, 0.2639, 0.0942)
258	PIQ	I	100	11.09±9.03	96.97±32.51	0.046	-0.096, 0.028, 0.034, 0.038, 0.047 (0.2109, 0.6181, 0.448, 0.3236, 0.1795)
259	PIQ	I	130	11.1±9.03	94.6±21.79	0.040	-0.094, 0.003, 0.039, 0.04, 0.04 (0.2207, 0.9632, 0.383, 0.3068, 0.249)

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Table 7 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
260	PIQ	R	5	11.04±9.04	103.73±53.42	0.089	0.106, 0.146, 0.126, 0.105, 0.09 (0.1725, 0.0071, 0.0044, 0.0064, 0.0092)
261	PIQ	R	10	11.06±9.01	101.58±47.81	0.087	0.155, 0.123, 0.109, 0.095, 0.088 (0.0446, 0.0239, 0.0141, 0.0135, 0.0109)
262	PIQ	R	20	11.05±8.92	105.52±72.87	0.125	0.064, 0.187, 0.133, 0.136, 0.126 (0.4086, 0.0006, 0.0027, 0.0004, 0.0003)
263	PIQ	R	40	11.0±9.03	99.4±43.09	0.111	0.155, 0.155, 0.134, 0.112, 0.112 (0.0446, 0.0043, 0.0025, 0.0037, 0.0012)
264	PIQ	R	70	10.93±8.92	112.79±90.89	0.175	0.233, 0.189, 0.164, 0.176, 0.175 (0.0024, 0.0005, 0.0003, 0.0001, 0.0001)
265	PIQ	R	100	10.98±9.0	104.57±66.28	0.133	0.162, 0.092, 0.11, 0.119, 0.133 (0.0359, 0.0931, 0.0134, 0.002, 0.0002)
266	PIQ	R	130	10.98±9.03	101.94±47.48	0.117	0.229, 0.077, 0.082, 0.113, 0.117 (0.0028, 0.1608, 0.0651, 0.0032, 0.0007)
267	PIQ	IR	5	11.06±9.05	99.59±35.81	0.064	0.09, 0.055, 0.071, 0.068, 0.064 (0.2469, 0.3175, 0.1106, 0.0782, 0.0627)
268	PIQ	IR	10	11.07±9.06	99.26±37.91	0.055	0.051, 0.034, 0.052, 0.05, 0.055 (0.5112, 0.5338, 0.2442, 0.193, 0.1091)
269	PIQ	IR	20	11.09±9.08	96.7±30.75	0.017	0.095, 0.011, 0.04, 0.017, 0.018 (0.2205, 0.8405, 0.3794, 0.6648, 0.6174)
270	PIQ	IR	40	11.07±9.04	96.9±27.68	0.060	0.095, -0.005, 0.054, 0.07, 0.06 (0.2217, 0.923, 0.2249, 0.0721, 0.081)
271	PIQ	IR	70	10.95±9.07	106.73±68.17	0.134	0.163, 0.092, 0.085, 0.11, 0.135 (0.0338, 0.0927, 0.0558, 0.0045, 0.0001)
272	PIQ	IR	100	10.99±9.03	101.62±53.62	0.115	0.103, 0.132, 0.112, 0.107, 0.116 (0.1838, 0.0154, 0.0119, 0.0054, 0.0008)
273	PIQ	IR	130	10.99±9.04	106.03±70.31	0.120	0.103, 0.146, 0.118, 0.126, 0.12 (0.1815, 0.0071, 0.0078, 0.001, 0.0005)
274	VIQ	I	5	11.24±9.0	96.02±25.31	0.119	0.075, 0.026, 0.05, 0.061, 0.119 (0.3368, 0.6426, 0.26, 0.1149, 0.0006)
275	VIQ	I	10	11.25±9.04	95.7±22.08	0.073	0.112, 0.042, 0.049, 0.051, 0.074 (0.1473, 0.443, 0.2778, 0.1854, 0.0323)
276	VIQ	I	20	11.24±9.05	96.5±27.38	0.080	0.12, 0.085, 0.085, 0.081, 0.08 (0.1195, 0.1184, 0.0557, 0.0361, 0.0204)
277	VIQ	I	40	11.24±8.98	97.3±26.49	0.137	0.174, 0.147, 0.14, 0.128, 0.138 (0.0238, 0.0069, 0.0016, 0.0009, 0.0001)
278	VIQ	I	70	11.21±9.05	96.33±27.15	0.101	0.212, 0.094, 0.069, 0.076, 0.101 (0.0056, 0.0858, 0.1203, 0.0502, 0.0034)
279	VIQ	I	100	11.26±9.02	94.71±21.17	0.103	0.168, 0.034, 0.08, 0.084, 0.104 (0.0295, 0.5411, 0.0719, 0.0302, 0.0026)
280	VIQ	I	130	11.26±9.04	94.96±21.35	0.085	0.093, 0.074, 0.061, 0.061, 0.086 (0.232, 0.1764, 0.1709, 0.1122, 0.0132)
281	VIQ	R	5	11.25±9.06	95.91±28.19	0.063	0.064, 0.075, 0.052, 0.04, 0.064 (0.4078, 0.1687, 0.245, 0.3033, 0.0645)
282	VIQ	R	10	11.25±9.13	96.55±30.14	0.032	0.17, 0.128, 0.091, 0.006, 0.033 (0.0269, 0.0187, 0.0402, 0.894, 0.3495)
283	VIQ	R	20	11.23±8.99	99.82±43.14	0.107	0.128, 0.089, 0.069, 0.065, 0.107 (0.0969, 0.1038, 0.1222, 0.0932, 0.0019)
284	VIQ	R	40	11.21±9.0	100.52±42.66	0.117	0.277, 0.137, 0.118, 0.11, 0.118 (0.0003, 0.0116, 0.0081, 0.0045, 0.0007)
285	VIQ	R	70	11.22±9.05	100.45±43.06	0.093	0.15, 0.101, 0.066, 0.069, 0.094 (0.052, 0.0648, 0.1398, 0.0722, 0.0066)
286	VIQ	R	100	11.27±9.04	95.35±21.61	0.064	0.104, 0.093, 0.06, 0.039, 0.064 (0.1806, 0.0902, 0.1777, 0.3179, 0.0629)
287	VIQ	R	130	11.2±9.02	102.94±55.29	0.120	-0.019, -0.013, 0.093, 0.09, 0.12 (0.796, 0.8015, 0.0365, 0.02, 0.0005)
288	VIQ	IR	5	11.27±9.04	95.8±25.8	0.059	0.039, 0.03, 0.023, 0.041, 0.059 (0.6146, 0.5835, 0.6097, 0.2953, 0.0879)
289	VIQ	IR	10	11.25±9.05	97.87±29.8	0.069	-0.013, 0.026, 0.008, 0.027, 0.069 (0.862, 0.639, 0.8651, 0.4971, 0.0453)
290	VIQ	IR	20	11.27±9.02	94.65±20.43	0.095	0.104, 0.11, 0.074, 0.075, 0.096 (0.1814, 0.0439, 0.0993, 0.0512, 0.0055)
291	VIQ	IR	40	11.22±9.08	100.09±48.19	0.081	0.098, 0.079, 0.031, 0.038, 0.082 (0.2073, 0.151, 0.4989, 0.3256, 0.0179)
292	VIQ	IR	70	11.17±9.08	100.56±59.72	0.109	0.095, 0.057, 0.032, 0.094, 0.109 (0.2215, 0.2993, 0.4768, 0.0151, 0.0015)
293	VIQ	IR	100	11.23±9.1	101.06±49.3	0.071	-0.058, 0.002, 0.023, 0.021, 0.071 (0.4523, 0.9792, 0.6178, 0.5935, 0.0395)

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Table 7 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
294	VIQ	IR	130	11.24±9.06	96.62±31.16	0.072	0.157, 0.067, 0.054, 0.058, 0.073 (0.0419, 0.223, 0.2302, 0.1341, 0.0357)
295	FSIQ	I	5	10.67±8.42	97.1±28.39	0.090	0.076, 0.05, 0.05, 0.068, 0.09 (0.3298, 0.3603, 0.2625, 0.0803, 0.0088)
296	FSIQ	I	10	10.65±8.4	96.67±29.36	0.115	0.077, 0.043, 0.096, 0.097, 0.115 (0.3194, 0.4378, 0.0319, 0.012, 0.0009)
297	FSIQ	I	20	10.66±8.38	99.05±35.45	0.122	0.105, 0.063, 0.084, 0.091, 0.122 (0.1746, 0.2538, 0.0589, 0.0189, 0.0004)
298	FSIQ	I	40	10.67±8.4	96.84±27.44	0.129	0.138, 0.097, 0.112, 0.11, 0.13 (0.0735, 0.0743, 0.012, 0.0043, 0.0002)
299	FSIQ	I	70	10.64±8.41	98.68±35.1	0.108	0.114, 0.084, 0.105, 0.1, 0.108 (0.1395, 0.1257, 0.0184, 0.0095, 0.0017)
300	FSIQ	I	100	10.64±8.41	97.17±31.1	0.127	0.134, 0.096, 0.151, 0.132, 0.127 (0.0824, 0.0801, 0.0007, 0.0006, 0.0003)
301	FSIQ	I	130	10.64±8.42	97.13±30.03	0.102	0.118, 0.08, 0.123, 0.101, 0.103 (0.1266, 0.1416, 0.0058, 0.0089, 0.0028)
302	FSIQ	R	5	10.66±8.54	98.94±39.45	0.043	0.034, 0.015, 0.016, 0.041, 0.043 (0.6621, 0.7925, 0.7328, 0.2963, 0.2118)
303	FSIQ	R	10	10.64±8.44	106.69±57.88	0.100	0.2, 0.141, 0.089, 0.105, 0.1 (0.0092, 0.0097, 0.0469, 0.0066, 0.0037)
304	FSIQ	R	20	10.64±8.54	104.38±59.48	0.083	0.048, 0.084, 0.08, 0.089, 0.084 (0.5385, 0.1241, 0.0722, 0.0213, 0.0153)
305	FSIQ	R	40	10.6±8.55	101.26±51.73	0.085	0.025, 0.043, 0.054, 0.051, 0.085 (0.7531, 0.4324, 0.2287, 0.1887, 0.0136)
306	FSIQ	R	70	10.55±8.55	111.91±96.02	0.130	0.106, 0.098, 0.121, 0.131, 0.13 (0.172, 0.0713, 0.0063, 0.0007, 0.0002)
307	FSIQ	R	100	10.54±8.52	107.34±72.18	0.130	0.112, 0.077, 0.093, 0.126, 0.131 (0.1469, 0.1592, 0.0359, 0.0011, 0.0002)
308	FSIQ	R	130	10.52±8.54	102.22±54.47	0.123	0.02, 0.06, 0.096, 0.111, 0.124 (0.8014, 0.2757, 0.0309, 0.0041, 0.0004)
309	FSIQ	IR	5	10.7±8.5	98.04±32.74	0.023	0.068, 0.063, 0.046, 0.041, 0.023 (0.3853, 0.2481, 0.3091, 0.2947, 0.5091)
310	FSIQ	IR	10	10.64±8.47	97.05±37.11	0.073	0.089, 0.056, 0.036, 0.096, 0.074 (0.2531, 0.3117, 0.4195, 0.013, 0.0326)
311	FSIQ	IR	20	10.63±8.57	97.6±42.54	0.043	0.056, 0.011, 0.014, 0.042, 0.043 (0.4747, 0.8515, 0.7564, 0.2818, 0.2136)
312	FSIQ	IR	40	10.58±8.43	102.81±56.88	0.131	0.092, 0.114, 0.106, 0.092, 0.132 (0.233, 0.0373, 0.0172, 0.0177, 0.0002)
313	FSIQ	IR	70	10.59±8.45	104.68±58.42	0.124	0.097, 0.041, 0.106, 0.131, 0.124 (0.213, 0.4537, 0.0173, 0.0007, 0.0004)
314	FSIQ	IR	100	10.66±8.47	103.99±53.06	0.088	0.013, 0.009, 0.078, 0.098, 0.089 (0.8696, 0.8797, 0.0791, 0.0114, 0.0102)
315	FSIQ	IR	130	10.64±8.49	102.4±46.96	0.092	-0.025, 0.126, 0.098, 0.09, 0.093 (0.7411, 0.0211, 0.0285, 0.0203, 0.007)

Table 8: Residual IQ prediction performance by 2D-VGG8 in setting 2. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
316	FSIQ	I	5	10.69±8.44	96.24±24.58	0.064	0.05, 0.026, 0.093, 0.007, -0.022 (0.5207, 0.7367, 0.232, 0.9059, 0.6841)
316	PIQ	I	5	11.11±9.01	96.58±21.78	0.040	0.064, 0.033, 0.04, 0.043, 0.051 (0.2455, 0.4621, 0.3738, 0.3434, 0.1926)
316	VIQ	I	5	11.28±9.04	94.63±21.83	0.058	0.028, 0.045, 0.064, 0.041, 0.058 (0.4816, 0.2442, 0.0638, 0.2386, 0.0937)
317	FSIQ	I	10	10.68±8.39	97.54±26.13	0.108	0.146, 0.099, 0.018, 0.086, 0.069 (0.0577, 0.2032, 0.8203, 0.1149, 0.2083)
317	PIQ	I	10	11.08±9.02	97.93±27.31	0.058	0.011, 0.08, 0.06, 0.073, 0.08 (0.852, 0.0735, 0.1796, 0.1042, 0.0387)
317	VIQ	I	10	11.27±9.0	96.86±26.8	0.101	0.054, 0.068, 0.109, 0.059, 0.101 (0.1627, 0.0781, 0.0016, 0.0892, 0.0034)
318	FSIQ	I	20	10.71±8.43	99.39±34.71	0.061	0.074, 0.024, 0.119, 0.03, 0.061 (0.3391, 0.7587, 0.1251, 0.5877, 0.2698)
318	PIQ	I	20	11.1±9.02	96.25±24.21	0.032	0.062, 0.019, 0.061, 0.041, 0.031 (0.2553, 0.6798, 0.1697, 0.3619, 0.4207)
318	VIQ	I	20	11.26±9.05	94.36±22.37	0.083	0.066, 0.053, 0.062, 0.032, 0.083 (0.0902, 0.1728, 0.0754, 0.3573, 0.0161)
319	FSIQ	I	40	10.7±8.42	98.09±30.77	0.059	0.102, 0.091, 0.119, 0.019, 0.051 (0.1875, 0.2387, 0.124, 0.7405, 0.3572)
319	PIQ	I	40	11.11±9.02	96.53±19.92	0.034	0.015, 0.019, 0.058, 0.062, 0.021 (0.7962, 0.6799, 0.1947, 0.1649, 0.601)
319	VIQ	I	40	11.25±9.03	95.69±24.12	0.087	0.036, 0.061, 0.06, 0.035, 0.088 (0.3583, 0.1169, 0.0846, 0.3161, 0.0111)
320	FSIQ	I	70	10.68±8.39	99.03±29.57	0.102	0.105, 0.032, 0.137, 0.072, -0.005 (0.1742, 0.687, 0.0755, 0.1861, 0.925)
320	PIQ	I	70	11.11±9.02	95.92±20.52	0.031	0.08, 0.122, 0.046, 0.114, 0.109 (0.1431, 0.006, 0.3017, 0.0103, 0.0047)
320	VIQ	I	70	11.27±9.01	95.49±27.07	0.100	0.041, 0.092, 0.102, 0.032, 0.1 (0.2913, 0.0171, 0.0031, 0.3663, 0.0036)
321	FSIQ	I	100	10.66±8.42	96.98±28.61	0.110	0.094, 0.031, 0.065, 0.042, 0.002 (0.2235, 0.6901, 0.4048, 0.4425, 0.9766)
321	PIQ	I	100	11.1±9.01	95.88±23.63	0.059	0.032, 0.132, 0.072, 0.041, 0.126 (0.5675, 0.0029, 0.1061, 0.3637, 0.0011)
321	VIQ	I	100	11.26±9.06	94.39±24.45	0.051	0.064, 0.052, 0.11, 0.06, 0.051 (0.1003, 0.1811, 0.0014, 0.0846, 0.1405)
322	FSIQ	I	130	10.67±8.39	99.84±33.48	0.101	0.129, 0.055, 0.118, 0.083, 0.04 (0.0956, 0.4789, 0.1275, 0.1284, 0.4625)
322	PIQ	I	130	11.1±9.01	97.98±29.72	0.051	0.1, 0.09, 0.049, 0.103, 0.094 (0.066, 0.0437, 0.2706, 0.0203, 0.0143)
322	VIQ	I	130	11.24±9.02	97.19±28.23	0.097	0.055, 0.094, 0.101, 0.052, 0.098 (0.1592, 0.0151, 0.0033, 0.1348, 0.0045)
323	FSIQ	R	5	10.67±8.51	99.35±36.36	0.051	0.049, 0.128, 0.101, 0.058, 0.102 (0.5301, 0.0971, 0.1915, 0.2919, 0.062)
323	PIQ	R	5	11.05±9.02	96.08±28.32	0.088	0.068, 0.059, 0.089, 0.055, 0.064 (0.2144, 0.1909, 0.046, 0.2229, 0.0969)
323	VIQ	R	5	11.32±8.99	97.25±23.35	0.061	0.089, 0.024, 0.051, 0.088, 0.062 (0.0209, 0.5335, 0.1397, 0.0105, 0.0748)
324	FSIQ	R	10	10.64±8.49	104.01±53.53	0.093	0.034, 0.121, 0.101, 0.057, 0.105 (0.6634, 0.1188, 0.1939, 0.2993, 0.0551)
324	PIQ	R	10	11.07±8.97	101.47±41.8	0.097	0.059, 0.046, 0.066, 0.058, 0.085 (0.2832, 0.306, 0.1425, 0.1912, 0.0275)
324	VIQ	R	10	11.31±9.0	98.62±28.29	0.047	0.089, 0.072, 0.093, 0.098, 0.048 (0.021, 0.0621, 0.0068, 0.0046, 0.1695)
325	FSIQ	R	20	10.54±8.45	97.8±32.15	0.106	0.113, 0.216, -0.066, 0.182, 0.252 (0.143, 0.0048, 0.3859, 0.0008, 0.0001)

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Table 8 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
325	PIQ	R	20	10.74±8.86	103.87±45.49	0.149	-0.065, 0.107, 0.15, -0.012, 0.101 (0.2254, 0.0163, 0.0008, 0.7744, 0.0034)
325	VIQ	R	20	11.53±9.37	95.73±28.1	-0.013	0.007, 0.064, 0.057, 0.051, 0.054 (0.914, 0.1743, 0.4173, 0.2151, 0.1598)
326	FSIQ	R	40	10.17±8.5	96.86±34.44	0.128	0.059, 0.142, 0.097, 0.129, 0.187 (0.4515, 0.0659, 0.2122, 0.0183, 0.0006)
326	PIQ	R	40	10.84±9.3	95.93±25.24	0.187	0.185, 0.163, 0.146, 0.133, 0.186 (0.0265, 0.0033, 0.0022, 0.0003, 0.0001)
326	VIQ	R	40	11.28±8.75	93.77±21.63	0.073	0.006, 0.036, 0.075, 0.088, 0.084 (0.9238, 0.4745, 0.1438, 0.0315, 0.0254)
327	FSIQ	R	70	9.94±8.65	102.7±48.31	0.135	0.136, 0.233, 0.034, 0.14, 0.128 (0.0238, 0.0069, 0.0016, 0.0024, 0.6689)
327	PIQ	R	70	10.57±9.43	95.85±31.6	0.232	0.242, 0.246, 0.243, 0.227, 0.219 (0.0015, 0.0001, 0.0001, 0.0001, 0.0001)
327	VIQ	R	70	11.32±9.19	96.64±21.72	0.033	0.056, 0.064, 0.046, 0.021, 0.032 (0.4875, 0.2754, 0.4455, 0.6457, 0.3364)
328	FSIQ	R	100	9.90±8.55	1.0458±0.567	0.119	0.037, 0.07, 0.034, 0.041, 0.035 (0.433, 0.5632, 0.6536, 0.3456, 0.6754)
328	PIQ	R	100	10.69±9.48	1.1153±0.5301	0.127	0.019, 0.11, 0.15, 0.045, 0.023 (0.7589, 0.3737, 0.3728, 0.3822, 0.1813)
328	VIQ	R	100	11.32±9.18	0.867±0.2345	0.081	0.054, 0.065, 0.034, 0.067, 0.061 (0.1046, 0.4745, 0.0336, 0.0182, 0.159)
329	FSIQ	R	130	10.65±8.53	104.47±62.0	0.073	-0.036, -0.08, -0.044, 0.048, 0.037 (0.633, 0.2962, 0.5676, 0.3861, 0.5067)
329	PIQ	R	130	11.02±9.09	101.83±47.08	0.082	0.017, 0.04, 0.04, 0.039, 0.052 (0.7589, 0.3737, 0.3728, 0.3822, 0.1813)
329	VIQ	R	130	11.27±9.03	96.8±25.48	0.061	0.063, 0.044, 0.073, 0.082, 0.062 (0.1043, 0.2546, 0.0338, 0.0169, 0.074)
330	FSIQ	IR	5	10.68±8.52	97.23±30.51	0.022	0.151, 0.141, 0.031, 0.077, 0.091 (0.0496, 0.0682, 0.6972, 0.1574, 0.0949)
330	PIQ	IR	5	11.07±9.05	96.42±27.42	0.048	0.008, 0.063, 0.104, 0.001, 0.028 (0.8836, 0.1585, 0.0195, 0.9872, 0.4688)
330	VIQ	IR	5	11.3±9.04	97.5±29.37	0.034	0.059, 0.017, 0.023, 0.048, 0.034 (0.1307, 0.6617, 0.5213, 0.1634, 0.3265)
331	FSIQ	IR	10	10.69±8.45	102.59±44.81	0.076	0.049, 0.054, -0.008, 0.079, 0.102 (0.5279, 0.49, 0.9093, 0.1463, 0.0612)
331	PIQ	IR	10	11.06±9.04	97.14±29.86	0.069	-0.011, 0.065, 0.09, -0.045, 0.063 (0.8272, 0.1463, 0.0429, 0.3022, 0.1026)
331	VIQ	IR	10	11.28±9.05	95.79±26.47	0.042	0.066, 0.024, 0.076, 0.07, 0.042 (0.0902, 0.5393, 0.0273, 0.0429, 0.2264)
332	FSIQ	IR	20	10.64±8.44	102.88±54.7	0.108	0.058, 0.014, 0.047, 0.121, 0.1 (0.4584, 0.859, 0.5502, 0.0265, 0.0679)
332	PIQ	IR	20	11.03±9.06	101.48±51.9	0.086	0.051, 0.101, 0.094, 0.023, 0.087 (0.355, 0.0238, 0.0339, 0.6152, 0.0247)
332	VIQ	IR	20	11.26±9.04	98.99±37.05	0.067	0.086, 0.025, 0.109, 0.086, 0.068 (0.0252, 0.5263, 0.0016, 0.0126, 0.0499)
333	FSIQ	IR	40	10.63±8.4	105.49±65.4	0.122	0.002, 0.138, 0.063, 0.12, 0.132 (0.9822, 0.074, 0.4195, 0.0282, 0.0152)
333	PIQ	IR	40	11.0±9.05	102.71±52.99	0.102	0.075, 0.133, 0.111, 0.116, 0.115 (0.1708, 0.0027, 0.0122, 0.0093, 0.0029)
333	VIQ	IR	40	11.2±9.02	97.74±32.29	0.111	0.103, 0.108, 0.122, 0.102, 0.112 (0.0078, 0.0051, 0.0004, 0.003, 0.0012)
334	FSIQ	IR	70	10.65±8.59	110.94±76.27	0.089	0.046, 0.119, 0.029, 0.068, 0.08 (0.5597, 0.1236, 0.7101, 0.2115, 0.1449)
334	PIQ	IR	70	11.07±9.12	109.63±64.74	0.073	0.036, 0.083, 0.062, 0.055, 0.075 (0.5159, 0.064, 0.1642, 0.2187, 0.0516)
334	VIQ	IR	70	11.27±9.05	103.35±49.03	0.070	0.066, 0.054, 0.089, 0.073, 0.07 (0.0861, 0.1662, 0.0099, 0.034, 0.0418)
335	FSIQ	IR	100	10.58±8.54	107.69±72.73	0.109	-0.015, 0.107, -0.162, 0.044, 0.085 (0.8439, 0.1655, 0.0342, 0.4216, 0.1193)
335	PIQ	IR	100	10.99±9.16	106.42±70.56	0.090	-0.007, 0.101, 0.08, 0.113, 0.096 (0.8974, 0.0236, 0.0732, 0.0108, 0.0127)
335	VIQ	IR	100	11.28±8.97	101.87±54.83	0.093	0.081, 0.086, 0.11, 0.09, 0.094 (0.0357, 0.0258, 0.0015, 0.0088, 0.0065)
336	FSIQ	IR	130	10.58±8.44	104.58±53.51	0.127	-0.009, -0.035, 0.057, 0.097, 0.081 (0.8981, 0.6474, 0.4634, 0.0751, 0.1376)
336	PIQ	IR	130	10.96±9.13	102.63±57.78	0.102	0.006, 0.13, 0.094, 0.1, 0.114 (0.9233, 0.0034, 0.0348, 0.0244, 0.0032)

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Table 8 – continued from previous page

Exp.	IQ	Data	# of Slices	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
336	VIQ	IR	130	11.26±9.02	100.58±37.62	0.085	0.095, 0.069, 0.127, 0.103, 0.086 (0.0141, 0.0743, 0.0003, 0.003, 0.0132)

Absolute and Residual IQ Prediction by 3D CNNs

Table 9: Absolute IQ prediction performance by 3D-ResNet18 in setting 1. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
337	PIQ	I	11.96±9.6	11.16±8.96	0.118	0.17, 0.085, 0.125, 0.166, 0.047 (0.0004, 0.8413, 0.0011, 0.0001, 0.1253)
338	PIQ	R	11.79±9.95	11.77±12.71	0.191	0.216, 0.231, 0.165, 0.158, 0.188 (0.0008, 0.0002, 0.0003, 0.0003, 0.0008)
339	PIQ	IR	11.92±9.74	11.13±9.09	0.091	0.062, 0.012, 0.127, 0.157, 0.123 (0.5777, 0.3287, 0.5328, 0.0188, 0.0081)
340	VIQ	I	12.35±9.65	11.35±8.86	0.168	0.177, 0.201, 0.081, 0.196, 0.187 (0.0001, 0.0003, 0.4321, 0.0004, 0.0009)
341	VIQ	R	12.35±9.77	11.35±8.98	0.138	0.143, 0.189, 0.082, 0.076, 0.203 (0.0004, 0.0001, 0.4329, 0.2342, 0.0003)
342	VIQ	IR	12.43±9.76	11.42±8.97	0.111	0.073, 0.168, 0.205, 0.084, 0.027 (0.0913, 0.0004, 0.0021, 0.1217, 0.0007)
343	FSIQ	I	11.72±9.01	10.8±8.3	0.141	0.221, 0.076, 0.103, 0.159, 0.149 (0.0004, 0.0892, 0.0001, 0.0001, 0.0002)
344	FSIQ	R	11.73±9.04	10.81±8.33	0.191	0.099, 0.152, 0.206, 0.254, 0.247 (0.0876, 0.001, 0.0003, 0.0003, 0.0001)
345	FSIQ	IR	11.67±9.12	10.75±8.4	0.150	0.129, 0.09, 0.178, 0.261, 0.094 (0.0004, 0.7835, 0.0008, 0.0009, 0.4956)

Table 10: Absolute IQ prediction performance by 3D-ResNet18 in setting 2. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
346	FSIQ	I	11.76±8.97	10.84±8.27	0.136	0.141, 0.147, 0.145, 0.126, 0.124 (0.0007, 0.0006, 0.0008, 0.0004, 0.0002)
346	PIQ	I	12.05±9.69	11.25±9.05	0.068	0.06, 0.057, 0.086, 0.058, 0.081 (0.0764, 0.0866, 0.0457, 0.0956, 0.1274)
346	VIQ	I	12.38±9.63	11.37±8.85	0.166	0.16, 0.164, 0.158, 0.184, 0.166 (0.0002, 0.0003, 0.0011, 0.0006, 0.0002)
347	FSIQ	R	11.67±9.16	11.40±11.25	0.192	0.209, 0.186, 0.198, 0.188, 0.182 (0.0004, 0.0007, 0.0001, 0.0001, 0.0001)
347	PIQ	R	11.89±9.65	11.1±9.01	0.168	0.165, 0.166, 0.162, 0.173, 0.176 (0.0009, 0.0002, 0.0009, 0.0004, 0.0003)
347	VIQ	R	12.5±9.9	11.48±9.09	0.144	0.134, 0.15, 0.138, 0.14, 0.161 (0.0008, 0.0008, 0.0002, 0.0004, 0.0007)
348	FSIQ	IR	11.73±9.06	10.81±8.35	0.118	0.109, 0.131, 0.107, 0.105, 0.141 (0.0002, 0.0016, 0.0012, 0.0003, 0.0003)
348	PIQ	IR	11.88±9.66	11.09±9.02	0.120	0.125, 0.13, 0.111, 0.11, 0.127 (0.001, 0.0004, 0.0009, 0.0007, 0.0005)
348	VIQ	IR	12.52±9.75	11.5±8.96	0.088	0.073, 0.103, 0.087, 0.082, 0.097 (0.1109, 0.0093, 0.2101, 0.0099, 0.5596)

Table 11: Absolute IQ prediction performance by 3D-ResNet50 in setting 1. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
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Table 11 – continued from previous page

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
349	PIQ	I	11.98±9.67	11.18±9.03	0.092	0.094, 0.086, 0.119, 0.083, 0.082 (0.087, 0.1177, 0.0968, 0.0686, 0.0882)
350	PIQ	R	11.93±9.59	11.14±8.95	0.122	0.132, 0.103, 0.124, 0.115, 0.139 (0.0006, 0.001, 0.001, 0.0001, 0.0003)
351	PIQ	IR	11.93±9.56	11.14±8.92	0.142	0.138, 0.151, 0.153, 0.149, 0.122 (0.0006, 0.0005, 0.001, 0.0005, 0.0003)
352	VIQ	I	12.38±9.68	11.37±8.89	0.151	0.168, 0.156, 0.134, 0.139, 0.16 (0.0, 0.0001, 0.0004, 0.0006, 0.0001)
353	VIQ	R	12.45±9.77	11.44±8.98	0.093	0.085, 0.099, 0.08, 0.103, 0.101 (0.0862, 0.0967, 0.1272, 0.0055, 0.0072)
354	VIQ	IR	12.42±9.9	11.41±9.09	0.069	0.068, 0.077, 0.057, 0.07, 0.076 (0.0442, 0.044, 0.0441, 0.0444, 0.0451)
355	FSIQ	I	11.66±9.11	10.75±8.4	0.134	0.146, 0.125, 0.145, 0.143, 0.113 (0.0004, 0.0011, 0.0003, 0.0001, 0.0004)
356	FSIQ	R	11.69±9.11	10.77±8.4	0.119	0.111, 0.109, 0.14, 0.122, 0.115 (0.0006, 0.0001, 0.0012, 0.0013, 0.0002)
357	FSIQ	IR	11.77±9.2	10.85±8.48	0.064	0.077, 0.053, 0.057, 0.051, 0.084 (0.0831, 0.0637, 0.0736, 0.0625, 0.0633)

Table 12: Absolute IQ prediction performance by 3D-ResNet50 in setting 2. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
358	FSIQ	I	11.76±9.04	10.84±8.33	0.122	0.128, 0.114, 0.124, 0.129, 0.117 (0.0008, 0.0003, 0.001, 0.001, 0.0008)
358	PIQ	I	11.99±9.66	11.19±9.02	0.090	0.084, 0.086, 0.084, 0.111, 0.088 (0.0986, 0.0879, 0.1281, 0.0081, 0.0084)
358	VIQ	I	12.46±9.65	11.45±8.86	0.142	0.138, 0.144, 0.149, 0.144, 0.138 (0.0006, 0.0002, 0.0005, 0.0001, 0.0011)
359	FSIQ	R	11.82±9.01	10.89±8.3	0.093	0.108, 0.082, 0.088, 0.096, 0.092 (0.006, 0.0278, 0.0958, 0.0871, 0.0769)
359	PIQ	R	11.98±9.62	11.18±8.98	0.115	0.111, 0.131, 0.119, 0.104, 0.113 (0.0005, 0.0014, 0.0004, 0.0012, 0.0008)
359	VIQ	R	12.5±9.71	11.48±8.92	0.093	0.084, 0.081, 0.095, 0.108, 0.099 (0.0969, 0.0868, 0.2366, 0.007, 0.0869)
360	FSIQ	IR	11.82±9.07	10.89±8.36	0.095	0.091, 0.092, 0.093, 0.098, 0.104 (0.5653, 0.07555, 0.1353, 0.5662, 0.0051)
360	PIQ	IR	12.04±9.6	11.24±8.96	0.063	0.052, 0.068, 0.08, 0.045, 0.073 (0.0667, 0.0673, 0.0684, 0.0673, 0.0665)
360	VIQ	IR	12.48±9.85	11.46±9.05	0.064	0.069, 0.073, 0.071, 0.048, 0.062 (0.061, 0.0597, 0.0598, 0.0599, 0.0608)

Table 13: Absolute IQ prediction performance by 3D-DenseNet121 in setting 1. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
361	PIQ	I	11.99±9.6	11.19±8.96	0.092	0.106, 0.088, 0.075, 0.099, 0.095 (0.0068, 0.0781, 0.1167, 0.1381, 0.097)
362	PIQ	R	11.82±9.65	11.03±9.01	0.150	0.147, 0.144, 0.162, 0.166, 0.134 (0.0002, 0.0002, 0.0006, 0.0001, 0.0001)
363	PIQ	IR	11.92±9.68	11.13±9.04	0.095	0.079, 0.108, 0.087, 0.094, 0.11 (0.006, 0.005, 0.006, 0.0052, 0.0056)
364	VIQ	I	12.38±9.66	11.37±8.87	0.153	0.148, 0.173, 0.153, 0.156, 0.138 (0.0001, 0.0007, 0.0005, 0.001, 0.0005)
365	VIQ	R	12.45±9.79	11.44±8.99	0.087	0.082, 0.076, 0.089, 0.089, 0.102 (0.0122, 0.011, 0.0123, 0.0109, 0.0118)
366	VIQ	IR	12.41±9.8	11.4±9.0	0.104	0.089, 0.101, 0.126, 0.103, 0.102 (0.0413, 0.0027, 0.0025, 0.0027, 0.0025)
367	FSIQ	I	11.72±9.08	10.8±8.37	0.116	0.098, 0.122, 0.131, 0.13, 0.101 (0.0898, 0.0003, 0.0015, 0.0004, 0.0006)
368	FSIQ	R	11.61±9.15	10.7±8.43	0.148	0.146, 0.165, 0.162, 0.136, 0.134 (0.0006, 0.0006, 0.0005, 0.0005, 0.0008)
369	FSIQ	IR	11.74±9.15	10.82±8.43	0.103	0.114, 0.087, 0.109, 0.121, 0.086 (0.0022, 0.0026, 0.0022, 0.0029, 0.0039)

Table 14: Absolute IQ prediction performance by 3D-DenseNet121 in setting 2. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
Continued on next page						

Table 14 – continued from previous page

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
370	FSIQ	I	11.76±9.03	10.84±8.32	0.133	0.13, 0.149, 0.124, 0.126, 0.137 (0.0004, 0.0004, 0.0003, 0.0005, 0.0008)
370	PIQ	I	12.04±9.66	11.24±9.02	0.062	0.056, 0.057, 0.068, 0.056, 0.075 (0.0695, 0.0712, 0.07, 0.0709, 0.0706)
370	VIQ	I	12.41±9.75	11.4±8.96	0.126	0.129, 0.124, 0.121, 0.141, 0.118 (0.0003, 0.0003, 0.0007, 0.0002, 0.0002)
371	FSIQ	R	11.65±9.16	10.74±8.44	0.132	0.13, 0.115, 0.145, 0.14, 0.133 (0.0003, 0.0003, 0.0004, 0.0005, 0.0008)
371	PIQ	R	11.92±9.67	11.13±9.03	0.108	0.121, 0.103, 0.126, 0.089, 0.102 (0.0014, 0.0023, 0.0015, 0.0016, 0.0015)
371	VIQ	R	12.4±9.86	11.39±9.06	0.109	0.115, 0.116, 0.092, 0.1, 0.124 (0.0009, 0.0012, 0.0022, 0.0024, 0.0005)
372	FSIQ	IR	11.78±9.06	10.86±8.35	0.116	0.125, 0.115, 0.112, 0.127, 0.104 (0.001, 0.0011, 0.0004, 0.0008, 0.0004)
372	PIQ	IR	11.99±9.6	11.19±8.96	0.109	0.115, 0.097, 0.097, 0.116, 0.122 (0.001, 0.0814, 0.0019, 0.0013, 0.0021)
372	VIQ	IR	12.54±9.76	11.52±8.97	0.051	0.059, 0.041, 0.056, 0.044, 0.057 (0.1369, 0.1367, 0.1372, 0.1371, 0.1369)

Table 15: Absolute IQ prediction performance by 3D-DenseNet169 in setting 1. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
373	PIQ	I	11.99±9.69	11.19±9.05	0.060	0.064, 0.073, 0.07, 0.042, 0.053 (0.0838, 0.1233, 0.0819, 0.0925, 0.2823)
374	PIQ	R	11.92±9.79	11.13±9.14	0.080	0.072, 0.086, 0.087, 0.077, 0.081 (0.1199, 0.5204, 0.0803, 0.0789, 0.0897)
375	PIQ	IR	11.98±9.66	11.18±9.02	0.076	0.077, 0.08, 0.092, 0.073, 0.061 (0.0262, 0.0275, 0.027, 0.0264, 0.0266)
376	VIQ	I	12.37±9.65	11.36±8.86	0.165	0.179, 0.169, 0.156, 0.169, 0.155 (0.0003, 0.0004, 0.0001, 0.0005, 0.0004)
377	VIQ	R	12.42±9.76	11.41±8.97	0.111	0.101, 0.094, 0.129, 0.118, 0.115 (0.0015, 0.0007, 0.0004, 0.0013, 0.0024)
378	VIQ	IR	12.38±9.9	11.37±9.09	0.097	0.089, 0.122, 0.086, 0.087, 0.103 (0.0843, 0.1352, 0.3451, 0.0952, 0.0045)
379	FSIQ	I	11.7±9.06	10.78±8.35	0.135	0.123, 0.153, 0.124, 0.132, 0.145 (0.0001, 0.0001, 0.0001, 0.0003, 0.0011)
380	FSIQ	R	11.72±9.07	10.8±8.36	0.137	0.129, 0.139, 0.152, 0.122, 0.145 (0.0002, 0.0011, 0.0001, 0.0004, 0.0006)
381	FSIQ	IR	11.71±9.17	10.79±8.45	0.092	0.098, 0.101, 0.082, 0.087, 0.094 (0.0066, 0.0071, 0.0084, 0.0071, 0.007)

Table 16: Absolute IQ prediction performance by 3D-DenseNet169 in setting 2. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
382	FSIQ	I	11.76±9.04	10.84±8.33	0.125	0.116, 0.116, 0.109, 0.144, 0.143 (0.0001, 0.0006, 0.0005, 0.0006, 0.0001)
382	PIQ	I	12.0±9.59	11.2±8.95	0.098	0.113, 0.09, 0.085, 0.093, 0.111 (0.004, 0.0232, 0.0149, 0.015, 0.0036)
382	VIQ	I	12.42±9.67	11.41±8.88	0.138	0.147, 0.142, 0.145, 0.123, 0.136 (0.0004, 0.0003, 0.0002, 0.0003, 0.0005)
383	FSIQ	R	11.75±9.04	10.83±8.33	0.123	0.109, 0.125, 0.13, 0.133, 0.121 (0.0005, 0.0007, 0.0001, 0.0002, 0.0008)
383	PIQ	R	11.98±9.61	11.18±8.97	0.113	0.124, 0.118, 0.125, 0.106, 0.094 (0.0007, 0.0005, 0.0019, 0.0013, 0.0239)
383	VIQ	R	12.43±9.75	11.42±8.96	0.119	0.124, 0.124, 0.115, 0.111, 0.125 (0.0018, 0.0001, 0.0001, 0.0003, 0.0006)
384	FSIQ	IR	11.74±9.08	10.82±8.37	0.107	0.11, 0.102, 0.095, 0.108, 0.122 (0.0013, 0.0023, 0.0015, 0.0017, 0.0025)
384	PIQ	IR	12.02±9.63	11.22±8.99	0.075	0.094, 0.078, 0.067, 0.071, 0.067 (0.0269, 0.0275, 0.0286, 0.0287, 0.028)
384	VIQ	IR	12.43±9.83	11.42±9.03	0.094	0.106, 0.083, 0.082, 0.109, 0.091 (0.0056, 0.0056, 0.0064, 0.0057, 0.0807)

Table 17: Residual IQ prediction performance by 3D-ResNet18 in setting 1. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
Continued on next page						

Table 17 – continued from previous page

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
385	PIQ	I	11.37±9.58	10.61±8.94	0.084	0.089, 0.088, 0.09, 0.077, 0.079 (0.0745, 0.0841, 0.5134, 0.6148, 0.0835)
386	PIQ	R	11.4±9.53	10.64±8.9	0.077	0.067, 0.083, 0.067, 0.101, 0.069 (0.0249, 0.0252, 0.025, 0.0248, 0.0244)
387	PIQ	IR	11.36±9.57	10.6±8.93	0.084	0.092, 0.083, 0.072, 0.082, 0.093 (0.0749, 0.1142, 0.5141, 0.6141, 0.0855)
388	VIQ	I	11.59±9.54	10.65±8.76	0.150	0.141, 0.157, 0.147, 0.156, 0.152 (0.0009, 0.0001, 0.001, 0.0002, 0.0002)
389	VIQ	R	11.65±9.6	10.7±8.82	0.090	0.085, 0.107, 0.079, 0.081, 0.101 (0.0679, 0.0081, 0.0897, 0.0978, 0.0092)
390	VIQ	IR	11.68±9.58	10.73±8.8	0.081	0.064, 0.089, 0.07, 0.092, 0.092 (0.089, 0.2181, 0.0883, 0.4185, 0.0884)
391	FSIQ	I	10.91±8.97	10.05±8.27	0.140	0.145, 0.138, 0.144, 0.141, 0.134 (0.0009, 0.0004, 0.0002, 0.0005, 0.0004)
392	FSIQ	R	11.02±9.13	10.16±8.41	0.009	0.025, 0.008, 0.019, 0.009, 0.003 (0.7821, 0.7834, 0.783, 0.7833, 0.7828)
393	FSIQ	IR	11.01±9.04	10.15±8.33	0.055	0.057, 0.056, 0.056, 0.053, 0.055 (0.1071, 0.1078, 0.107, 0.1077, 0.1078)

Table 18: Residual IQ prediction performance by 3D-ResNet18 in setting 2. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
394	FSIQ	I	10.95±8.95	10.09±8.25	0.130	0.138, 0.131, 0.121, 0.131, 0.132 (0.0001, 0.0004, 0.0001, 0.0011, 0.0003)
394	PIQ	I	11.43±9.52	10.67±8.89	0.064	0.064, 0.081, 0.048, 0.08, 0.05 (0.0622, 0.0623, 0.0614, 0.062, 0.062)
394	VIQ	I	11.62±9.55	10.67±8.77	0.147	0.149, 0.137, 0.138, 0.15, 0.164 (0.0006, 0.0003, 0.0005, 0.0001, 0.0001)
395	FSIQ	R	11.01±8.99	10.15±8.28	0.058	0.062, 0.044, 0.061, 0.057, 0.069 (0.0904, 0.092, 0.0917, 0.0916, 0.091)
395	PIQ	R	11.41±9.55	10.65±8.92	0.058	0.069, 0.043, 0.06, 0.071, 0.049 (0.0899, 0.0903, 0.0909, 0.0905, 0.0902)
395	VIQ	R	11.7±9.6	10.75±8.82	0.057	0.046, 0.068, 0.059, 0.068, 0.046 (0.0979, 0.0984, 0.0983, 0.0983, 0.0983)
396	FSIQ	IR	11.06±8.93	10.19±8.23	0.054	0.052, 0.063, 0.034, 0.059, 0.065 (0.117, 0.1185, 0.118, 0.1171, 0.1187)
396	PIQ	IR	11.43±9.56	10.67±8.92	0.026	0.028, 0.037, 0.023, 0.032, 0.013 (0.4513, 0.4517, 0.4523, 0.4518, 0.4521)
396	VIQ	IR	11.69±9.56	10.74±8.78	0.087	0.094, 0.101, 0.085, 0.083, 0.074 (0.0112, 0.011, 0.0116, 0.0112, 0.0103)

Table 19: Residual IQ prediction performance by 3D-ResNet50 in setting 1. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
397	PIQ	I	11.37±9.55	10.61±8.92	0.087	0.083, 0.094, 0.093, 0.085, 0.082 (0.012, 0.0107, 0.0118, 0.011, 0.0117)
398	PIQ	R	11.38±9.54	10.62±8.91	0.081	0.078, 0.08, 0.081, 0.099, 0.07 (0.0186, 0.0192, 0.0183, 0.02, 0.0187)
399	PIQ	IR	11.36±9.57	10.6±8.93	0.080	0.084, 0.09, 0.062, 0.096, 0.07 (0.0204, 0.02, 0.02, 0.0198, 0.0195)
400	VIQ	I	11.59±9.55	10.65±8.77	0.143	0.123, 0.146, 0.146, 0.156, 0.146 (0.0004, 0.0002, 0.0001, 0.0002, 0.0011)
401	VIQ	R	11.64±9.71	10.69±8.92	0.070	0.083, 0.059, 0.075, 0.063, 0.072 (0.0406, 0.042, 0.0412, 0.0405, 0.0424)
402	VIQ	IR	11.69±9.62	10.74±8.84	0.055	0.048, 0.065, 0.06, 0.045, 0.059 (0.1085, 0.1101, 0.1093, 0.1089, 0.1095)
403	FSIQ	I	10.92±8.95	10.06±8.25	0.130	0.13, 0.126, 0.138, 0.142, 0.117 (0.0005, 0.0003, 0.0001, 0.0006, 0.0001)
404	FSIQ	R	11.02±8.98	10.16±8.28	0.041	0.035, 0.033, 0.032, 0.05, 0.057 (0.2366, 0.2363, 0.2365, 0.2356, 0.2352)
405	FSIQ	IR	11.03±8.94	10.16±8.24	0.097	0.082, 0.117, 0.083, 0.087, 0.118 (0.0043, 0.0048, 0.0047, 0.005, 0.0045)

Table 20: Residual IQ prediction performance by 3D-ResNet50 in setting 2. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
Continued on next page						

Table 20 – continued from previous page

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
406	FSIQ	I	10.96±8.86	10.1±8.16	0.142	0.13, 0.162, 0.143, 0.142, 0.135 (0.0005, 0.0004, 0.0007, 0.001, 0.0001)
406	PIQ	I	11.35±9.53	10.6±8.9	0.104	0.116, 0.105, 0.1, 0.087, 0.114 (0.0021, 0.0029, 0.0024, 0.0025, 0.0024)
406	VIQ	I	11.61±9.52	10.67±8.75	0.139	0.134, 0.135, 0.14, 0.138, 0.151 (0.0009, 0.0007, 0.0006, 0.0001, 0.0003)
407	FSIQ	R	11.02±8.98	10.16±8.28	0.060	0.045, 0.062, 0.07, 0.055, 0.07 (0.0817, 0.0826, 0.0832, 0.0824, 0.0818)
407	PIQ	R	11.41±9.55	10.65±8.92	0.083	0.081, 0.078, 0.075, 0.098, 0.085 (0.0149, 0.0147, 0.0147, 0.0156, 0.0148)
407	VIQ	R	11.71±9.59	10.76±8.81	0.060	0.059, 0.06, 0.056, 0.074, 0.054 (0.0798, 0.0782, 0.0793, 0.0781, 0.0783)
408	FSIQ	IR	11.05±8.94	10.18±8.24	0.062	0.067, 0.062, 0.052, 0.07, 0.06 (0.0728, 0.0736, 0.0728, 0.0728, 0.0732)
408	PIQ	IR	11.42±9.55	10.66±8.92	0.072	0.075, 0.082, 0.076, 0.07, 0.059 (0.0351, 0.0355, 0.0352, 0.0345, 0.0344)
408	VIQ	IR	11.7±9.61	10.75±8.83	0.045	0.033, 0.061, 0.031, 0.066, 0.037 (0.1936, 0.1948, 0.1946, 0.1949, 0.1949)

Table 21: Residual IQ prediction performance by 3D-DenseNet121 in setting 1. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
409	PIQ	I	11.35±9.6	10.6±8.96	0.085	0.098, 0.099, 0.071, 0.072, 0.088 (0.0122, 0.0138, 0.0134, 0.0126, 0.0133)
410	PIQ	R	11.34±9.57	10.59±8.93	0.095	0.111, 0.087, 0.081, 0.112, 0.087 (0.0049, 0.0761, 0.0457, 0.0064, 0.0947)
411	PIQ	IR	11.38±9.53	10.62±8.9	0.094	0.086, 0.091, 0.094, 0.093, 0.109 (0.0052, 0.0055, 0.0065, 0.006, 0.0066)
412	VIQ	I	11.56±9.55	10.62±8.77	0.152	0.141, 0.17, 0.143, 0.168, 0.14 (0.0004, 0.0007, 0.0008, 0.0009, 0.0003)
413	VIQ	R	11.68±9.58	10.73±8.8	0.102	0.129, 0.093, 0.095, 0.099, 0.096 (0.0032, 0.053, 0.0731, 0.0425, 0.0235)
414	VIQ	IR	11.65±9.56	10.7±8.78	0.107	0.111, 0.103, 0.113, 0.116, 0.093 (0.0018, 0.0013, 0.0015, 0.0025, 0.0016)
415	FSIQ	I	10.88±8.95	10.03±8.25	0.155	0.153, 0.166, 0.147, 0.138, 0.172 (0.0001, 0.0002, 0.0003, 0.0001, 0.0003)
416	FSIQ	R	11.02±9.02	10.16±8.31	0.053	0.049, 0.044, 0.04, 0.066, 0.068 (0.12, 0.121, 0.1195, 0.1203, 0.1209)
417	FSIQ	IR	11.01±9.02	10.15±8.31	0.052	0.044, 0.059, 0.045, 0.056, 0.059 (0.1287, 0.1282, 0.1282, 0.1286, 0.1271)

Table 22: Residual IQ prediction performance by 3D-DenseNet121 in setting 2. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
418	FSIQ	I	10.92±8.89	10.06±8.19	0.158	0.149, 0.162, 0.157, 0.143, 0.182 (0.0002, 0.0005, 0.0005, 0.0011, 0.0004)
418	PIQ	I	11.42±9.47	10.66±8.84	0.103	0.116, 0.114, 0.102, 0.08, 0.105 (0.0027, 0.0027, 0.0028, 0.0027, 0.0029)
418	VIQ	I	11.6±9.49	10.66±8.72	0.153	0.167, 0.162, 0.149, 0.147, 0.142 (0.0004, 0.0004, 0.0006, 0.0002, 0.0001)
419	FSIQ	R	11.04±9.01	10.17±8.3	-0.015	0.004, 0.028, 0.011, 0.028, 0.001 (0.6631, 0.6632, 0.6634, 0.6646, 0.6633)
419	PIQ	R	11.42±9.55	10.66±8.92	0.049	0.057, 0.038, 0.062, 0.034, 0.057 (0.1525, 0.1524, 0.1508, 0.1516, 0.152)
419	VIQ	R	11.7±9.65	10.75±8.86	-0.004	0.001, 0.005, 0.0, 0.001, 0.013 (0.9004, 0.8999, 0.8997, 0.901, 0.9002)
420	FSIQ	IR	11.03±8.96	10.16±8.26	0.056	0.069, 0.043, 0.06, 0.062, 0.049 (0.1032, 0.1038, 0.104, 0.1046, 0.1041)
420	PIQ	IR	11.39±9.55	10.63±8.92	0.086	0.096, 0.085, 0.074, 0.103, 0.075 (0.0123, 0.0129, 0.0125, 0.013, 0.0121)
420	VIQ	IR	11.71±9.63	10.76±8.85	0.009	0.013, 0.018, 0.012, 0.008, 0.004 (0.7851, 0.786, 0.7851, 0.7845, 0.786)

Table 23: Residual IQ prediction performance by 3D-DenseNet169 in setting 1. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
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Table 23 – continued from previous page

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
421	PIQ	I	11.31±9.57	10.56±8.93	0.111	0.108, 0.111, 0.107, 0.124, 0.109 (0.0014, 0.0018, 0.0009, 0.0007, 0.0015)
422	PIQ	R	11.36±9.56	10.6±8.92	0.085	0.093, 0.086, 0.08, 0.076, 0.092 (0.0529, 0.0733, 0.0836, 0.0935, 0.1324)
423	PIQ	IR	11.37±9.53	10.61±8.9	0.099	0.101, 0.084, 0.094, 0.116, 0.102 (0.0046, 0.0038, 0.0038, 0.0044, 0.0036)
424	VIQ	I	11.54±9.5	9.83±4.95	0.168	0.179, 0.152, 0.167, 0.17, 0.174 (0.0005, 0.0001, 0.0009, 0.0006, 0.0006)
425	VIQ	R	11.66±9.59	10.71±8.81	0.088	0.088, 0.094, 0.105, 0.083, 0.072 (0.0102, 0.0591, 0.1102, 0.0697, 0.0105)
426	VIQ	IR	11.67±9.54	10.72±8.76	0.104	0.092, 0.116, 0.089, 0.104, 0.123 (0.0027, 0.0024, 0.0022, 0.0025, 0.0019)
427	FSIQ	I	10.92±8.99	10.06±8.28	0.136	0.146, 0.133, 0.134, 0.13, 0.138 (0.0004, 0.0002, 0.0003, 0.001, 0.0006)
428	FSIQ	R	11.01±8.96	10.15±8.26	0.089	0.096, 0.096, 0.083, 0.1, 0.073 (0.0095, 0.0104, 0.0107, 0.009, 0.0097)
429	FSIQ	IR	11.0±9.01	10.14±8.3	0.046	0.059, 0.041, 0.052, 0.036, 0.044 (0.1785, 0.1776, 0.1787, 0.179, 0.178)

Table 24: Residual IQ prediction performance by 3D-DenseNet169 in setting 2. MAE and correlation coefficient (r) are combined over 5-folds. For p -values equal to or smaller than 0.0001 are shown as 0.0001. Acronyms are used as, Exp: experiment number, I: Intensity map as input, R: RAVENS map as input, and IR: combined Intensity and RAVENS maps as input.

Exp.	IQ	Data	Mean MAE	Mean MAPE (%)	r for N	r for 5-folds $[N/5]$ (corresponding p -value for 5-folds)
430	FSIQ	I	10.96±8.88	10.1±8.18	0.142	0.145, 0.14, 0.146, 0.136, 0.145 (0.0002, 0.0001, 0.0005, 0.0004, 0.0001)
430	PIQ	I	11.38±9.5	10.62±8.87	0.110	0.105, 0.102, 0.12, 0.117, 0.109 (0.0018, 0.0008, 0.002, 0.0009, 0.0012)
430	VIQ	I	11.63±9.5	10.68±8.73	0.142	0.152, 0.127, 0.151, 0.145, 0.138 (0.0003, 0.0003, 0.0001, 0.0003, 0.0006)
431	FSIQ	R	11.02±8.99	10.16±8.28	0.041	0.053, 0.044, 0.043, 0.043, 0.026 (0.2278, 0.2267, 0.2278, 0.2285, 0.2284)
431	PIQ	R	11.4±9.56	10.64±8.92	0.062	0.053, 0.074, 0.073, 0.058, 0.054 (0.0698, 0.0714, 0.0698, 0.0699, 0.07)
431	VIQ	R	11.71±9.67	10.76±8.88	0.019	0.004, 0.011, 0.037, 0.009, 0.037 (0.5722, 0.572, 0.5715, 0.5721, 0.5706)
432	FSIQ	IR	11.0±8.95	10.14±8.25	0.088	0.084, 0.099, 0.088, 0.08, 0.091 (0.0098, 0.0099, 0.0107, 0.0107, 0.0107)
432	PIQ	IR	11.38±9.54	10.62±8.91	0.092	0.097, 0.097, 0.104, 0.068, 0.096 (0.0079, 0.0073, 0.0071, 0.0074, 0.0075)
432	VIQ	IR	11.72±9.61	10.77±8.83	0.041	0.035, 0.026, 0.058, 0.03, 0.059 (0.232, 0.2325, 0.2309, 0.2315, 0.2313)

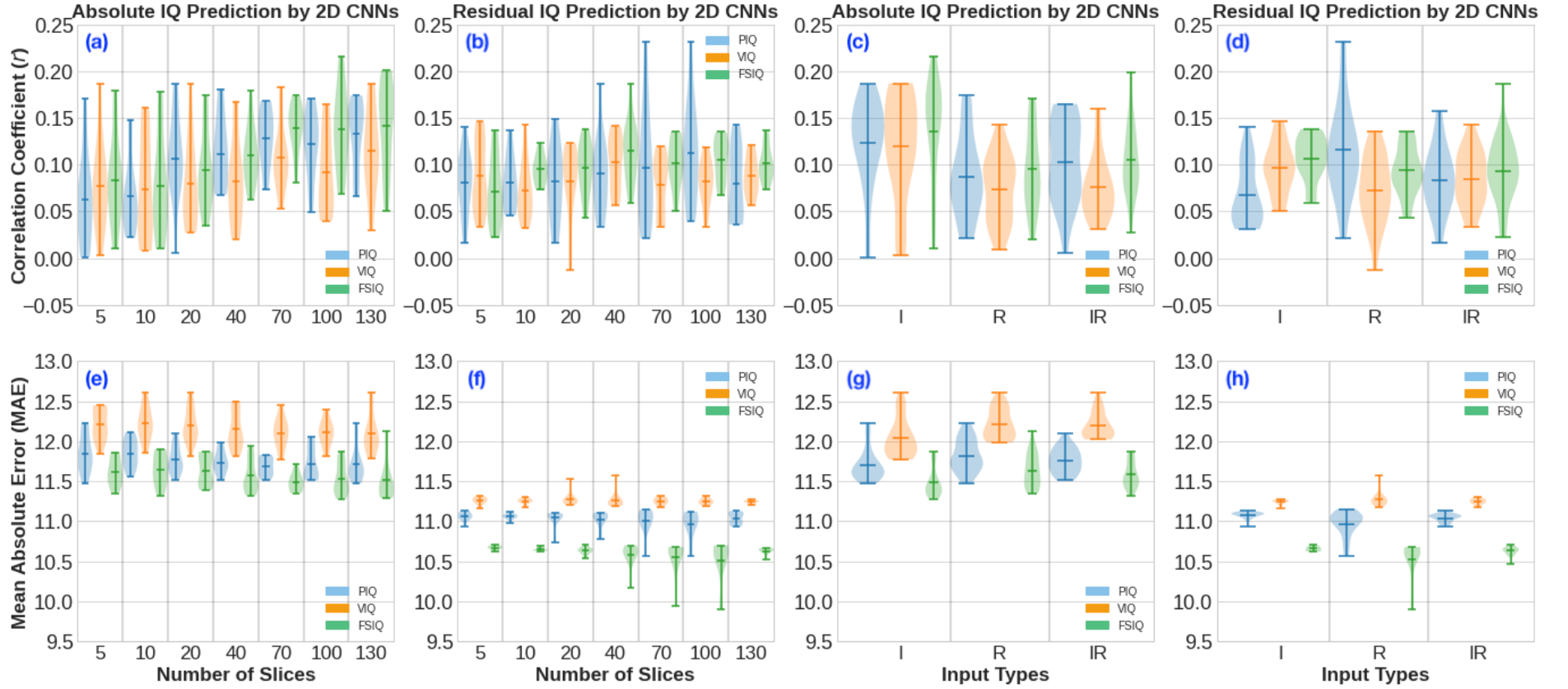


Figure 1: Violin plots showing absolute and residual IQ prediction performance in terms of Pearson correlation coefficient (r) (a-d) and mean absolute error (e-h) by both 2D-ResNet18 and 2D-VGG8 in settings 1 and 2. (a, e) Predicted absolute PIQ, VIQ, and FSIQ scores *vs.* numbers of slices, (b, f) predicted residual PIQ, VIQ, and FSIQ scores *vs.* numbers of slices, (c, g) predicted absolute PIQ, VIQ, and FSIQ scores *vs.* input types, and (d, h) predicted residual PIQ, VIQ, and FSIQ scores *vs.* input types.

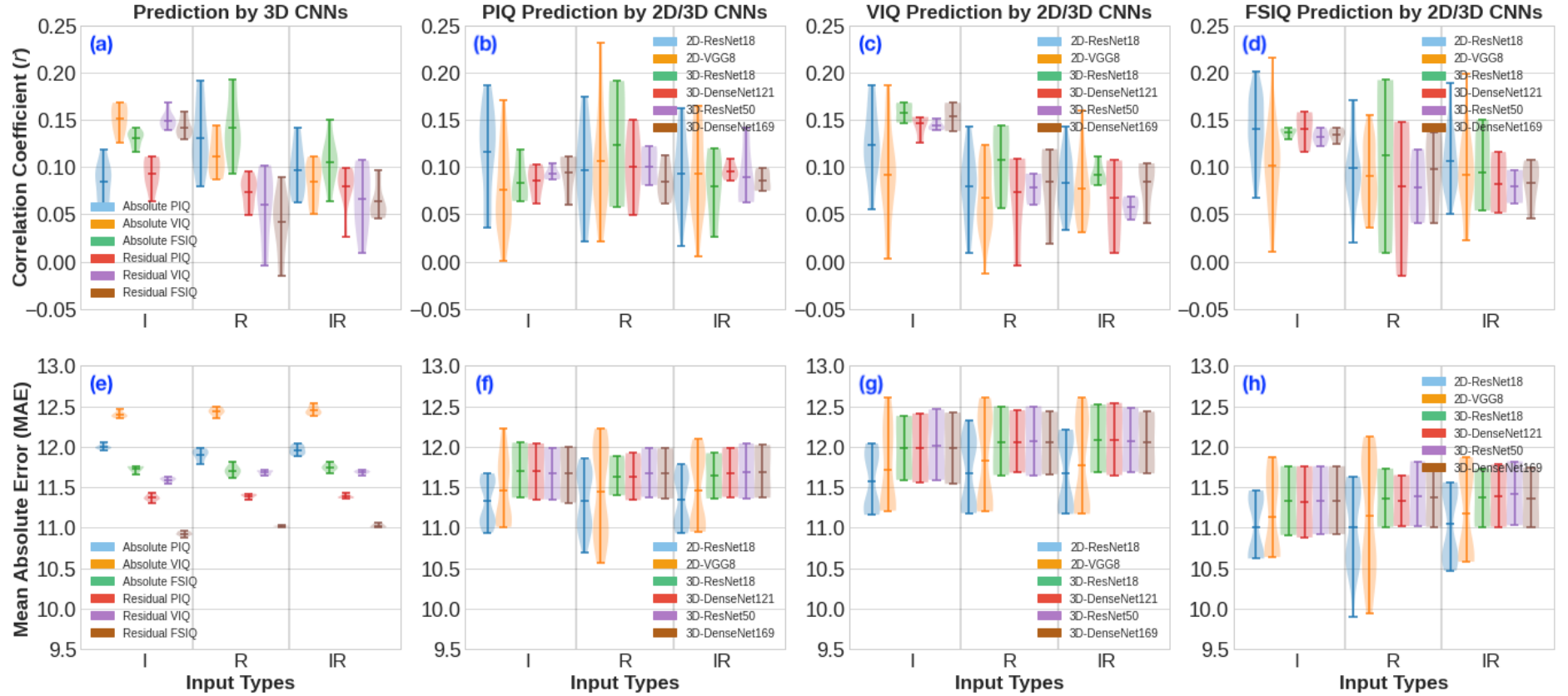


Figure 2: Violin plots showing absolute and residual IQ prediction performance in terms of Pearson correlation coefficient (r) and mean absolute error by 2D and 3D CNNs in settings 1 and 2. (a) Correlation and (e) mean absolute error between the ground truth and absolute/residual PIQ, VIQ, and FSIQ scores *vs.* input types by 3D-ResNet18, 3D-ResNet50, 3D-DenseNet121, and 3D-DenseNet169. (b-d) Correlation and (e-g) mean absolute error between the ground truth and actual/residual PIQ, VIQ, and FSIQ scores *vs.* input types, respectively, by different 2D and 3D CNNs.

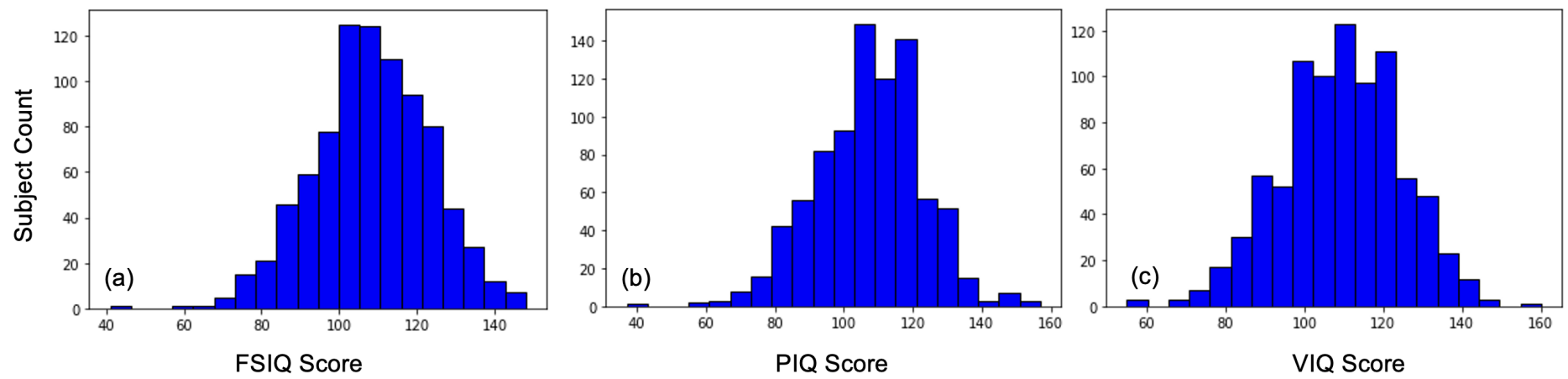


Figure 3: Histograms of (a) FSIQ, (b) PIQ, and (c) VIQ scores in our dataset.

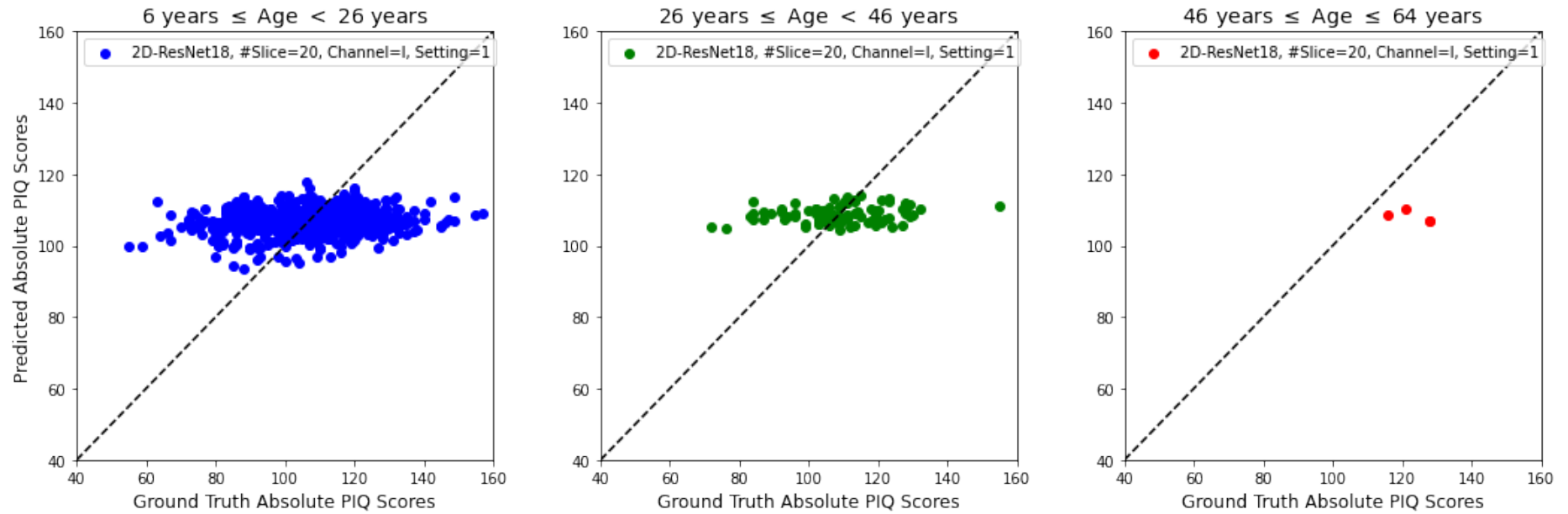


Figure 4: Scatter plot showing Predicted vs. Ground Truth absolute PIQ scores by 2D-ResNet18 for #Slice = 20, Input Channel = I, Output Setting = 1 (Experiment Number = 3). Plots from left to right correspond to samples of $6 \text{ years} \leq \text{Age} < 26 \text{ years}$, $26 \text{ years} \leq \text{Age} < 46 \text{ years}$, and $46 \text{ years} \leq \text{Age} \leq 64 \text{ years}$, respectively.

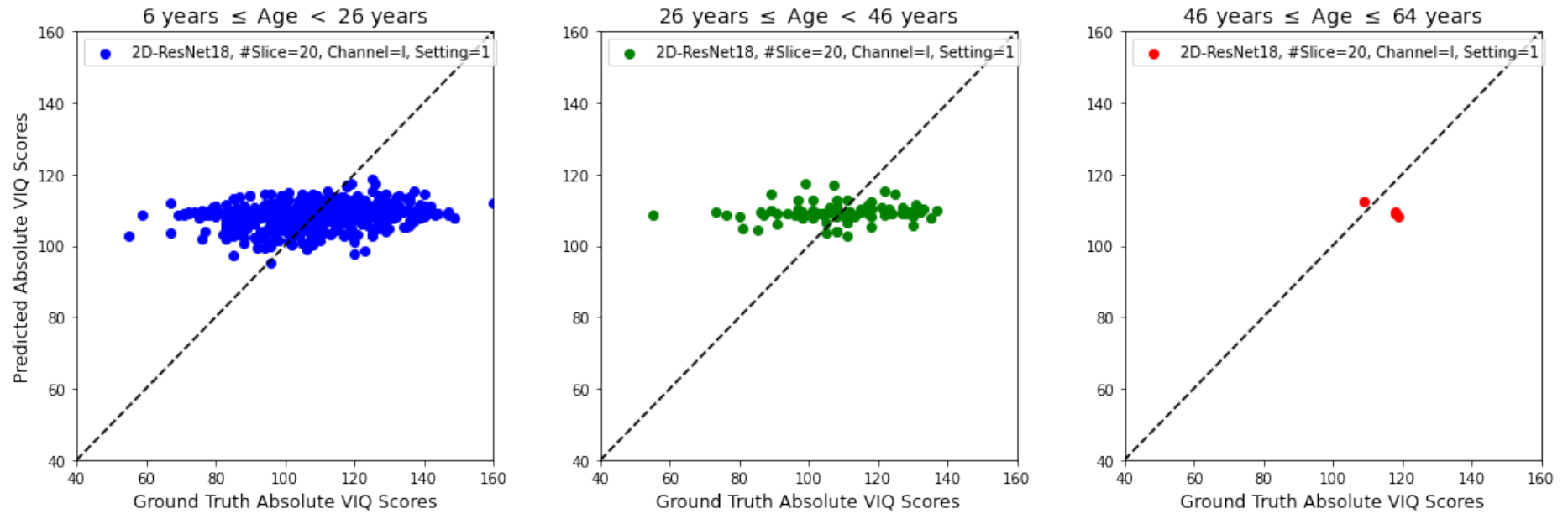


Figure 5: Scatter plot showing Predicted vs. Ground Truth absolute VIQ scores by 2D-ResNet18 for #Slice = 20, Input Channel = I, Output Setting = 1 (Experiment Number = 24). Plots from left to right correspond to samples of 6 years $\leq$ Age < 26 years, 26 years $\leq$ Age < 46 years, and 46 years $\leq$ Age $\leq$ 64 years, respectively.

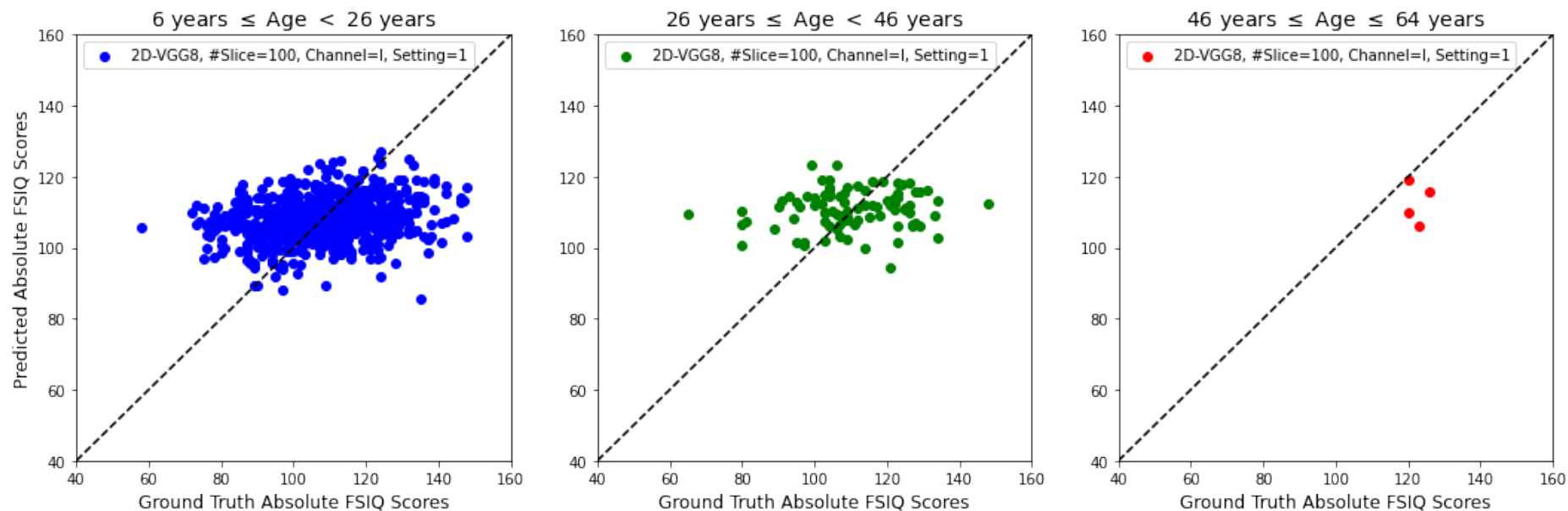


Figure 6: Scatter plot showing Predicted vs. Ground Truth absolute FSIQ scores by 2D-VGG8 for #Slice = 100, Input Channel = I, Output Setting = 1 (Experiment Number = 132). Plots from left to right correspond to samples of $6 \text{ years} \leq \text{Age} < 26 \text{ years}$, $26 \text{ years} \leq \text{Age} < 46 \text{ years}$, and $46 \text{ years} \leq \text{Age} \leq 64 \text{ years}$, respectively.

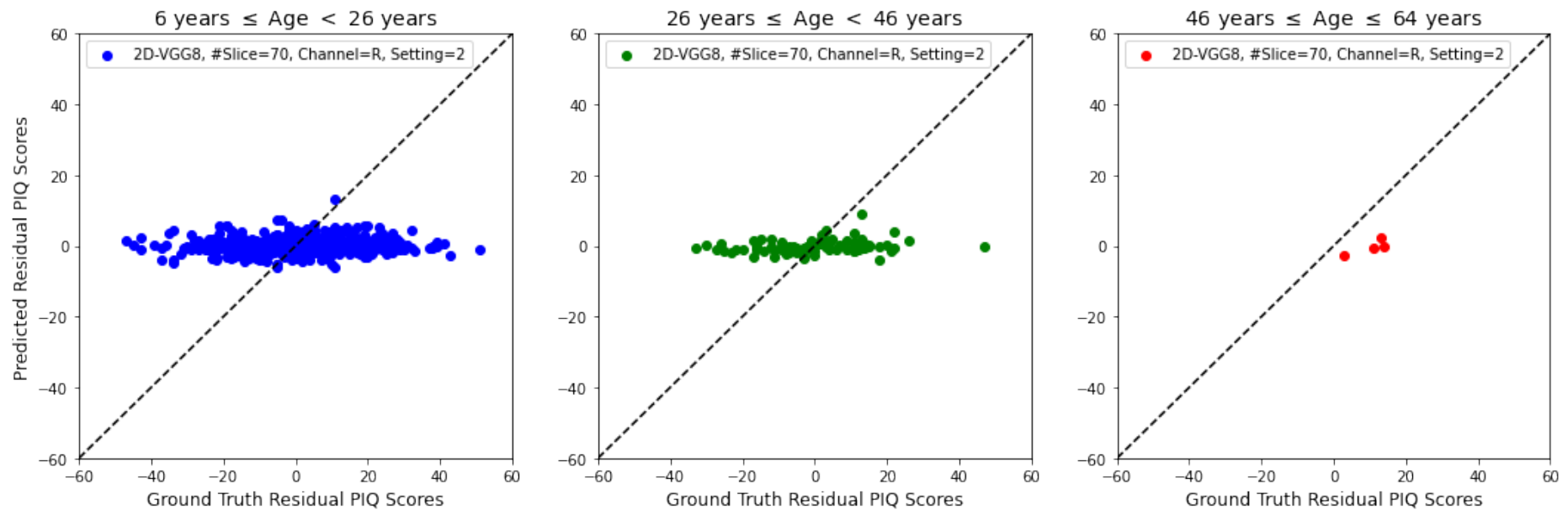


Figure 7: Scatter plot showing Predicted vs. Ground Truth residual PIQ scores by 2D-VGG8 for #Slice = 70, Input Channel = R, Output Setting = 2 (Experiment Number = 327). Plots from left to right correspond to samples of $6 \text{ years} \leq \text{Age} < 26 \text{ years}$, $26 \text{ years} \leq \text{Age} < 46 \text{ years}$, and $46 \text{ years} \leq \text{Age} \leq 64 \text{ years}$, respectively.

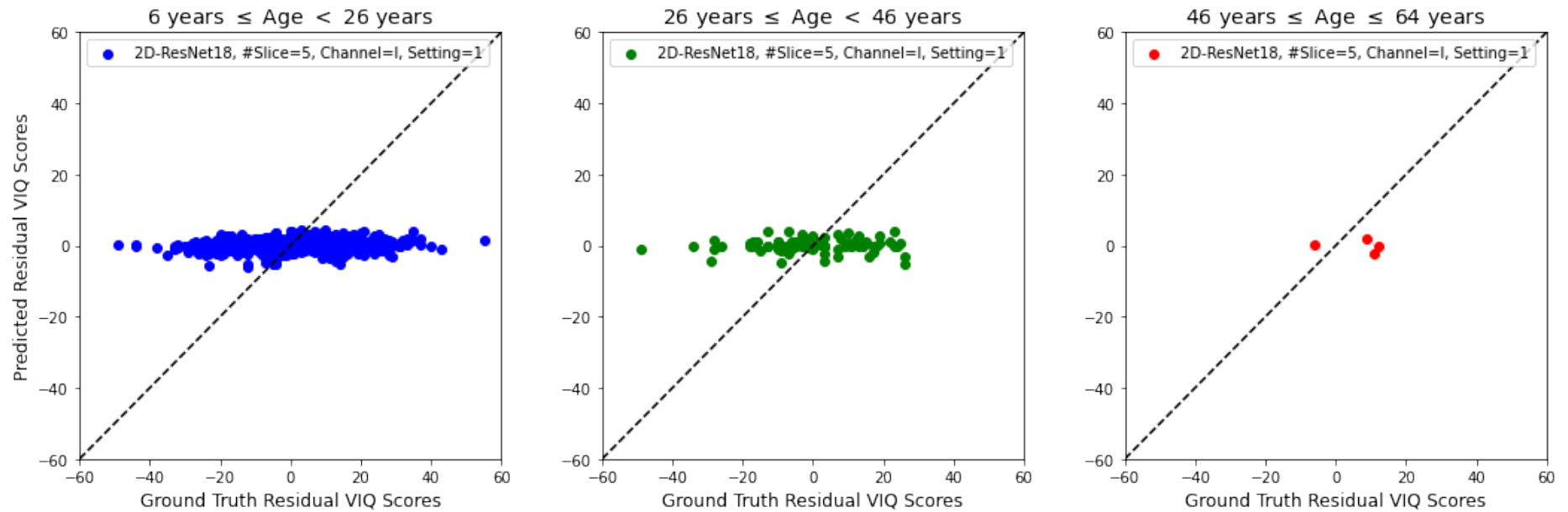


Figure 8: Scatter plot showing Predicted vs. Ground Truth residual VIQ scores by 2D-Resnet18 for #Slice = 5, Input Channel = I, Output Setting = 1 (Experiment Number = 190). Plots from left to right correspond to samples of $6 \text{ years} \leq \text{Age} < 26 \text{ years}$, $26 \text{ years} \leq \text{Age} < 46 \text{ years}$, and $46 \text{ years} \leq \text{Age} \leq 64 \text{ years}$, respectively.

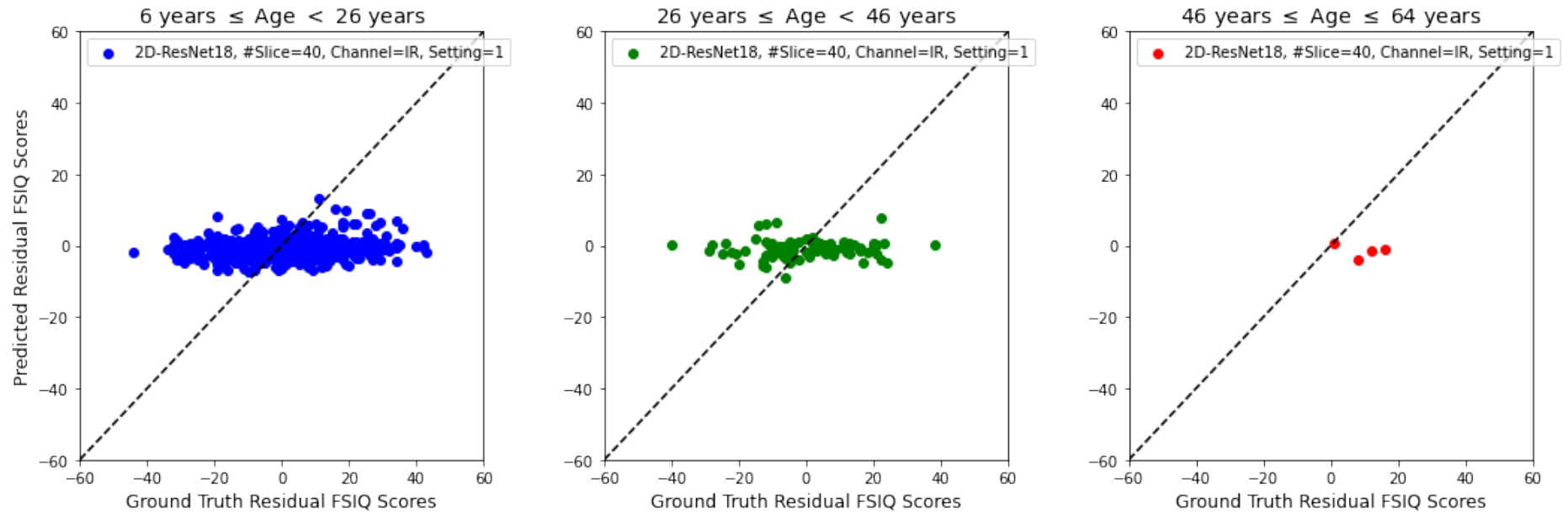


Figure 9: Scatter plot showing Predicted vs. Ground Truth residual FSIQ scores by 2D-Resnet18 for #Slice = 40, Input Channel = IR, Output Setting = 1 (Experiment Number = 228). Plots from left to right correspond to samples of $6 \text{ years} \leq \text{Age} < 26 \text{ years}$, $26 \text{ years} \leq \text{Age} < 46 \text{ years}$, and $46 \text{ years} \leq \text{Age} \leq 64 \text{ years}$, respectively.

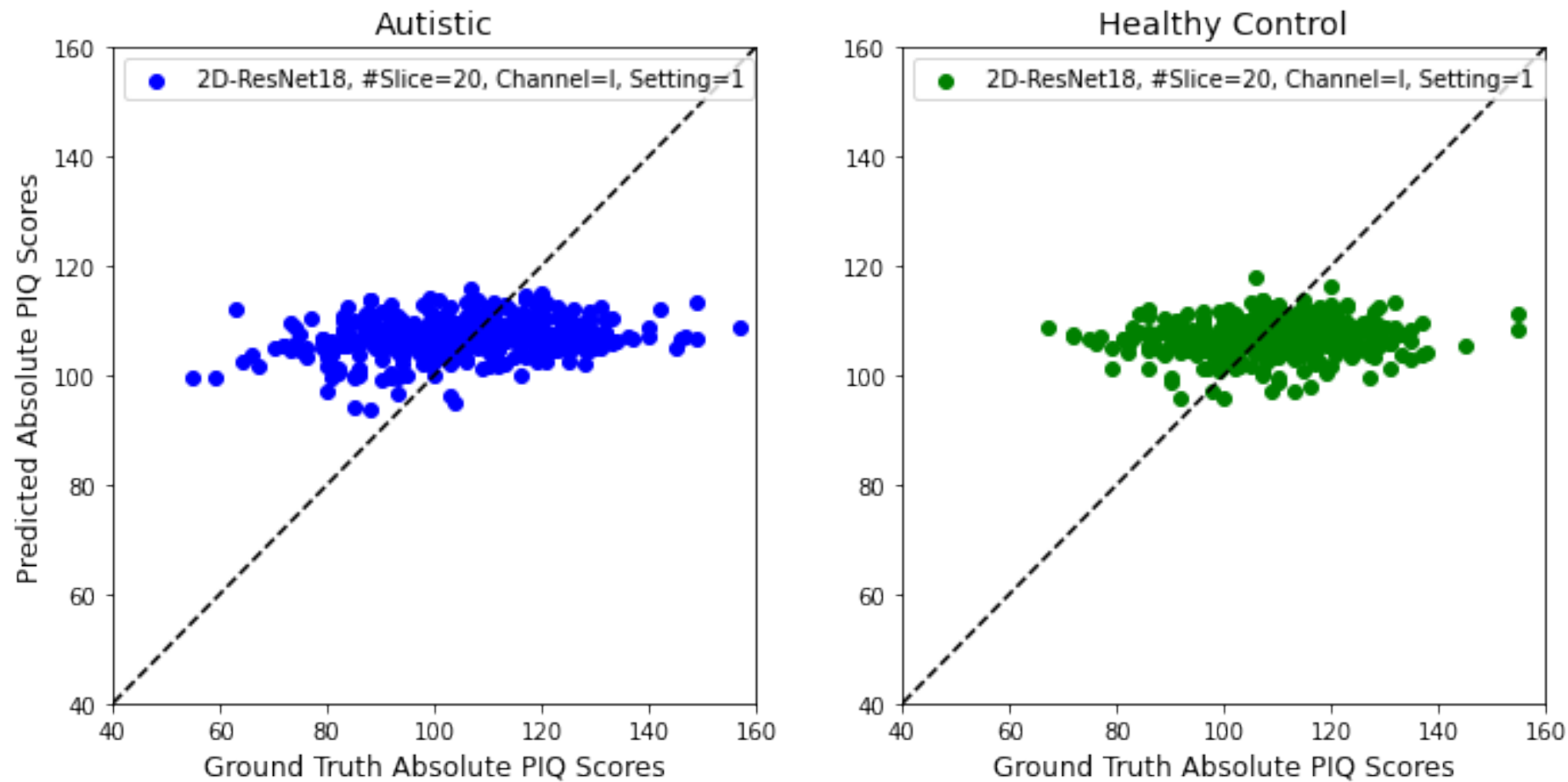


Figure 10: Scatter plot showing Predicted vs. Ground Truth absolute PIQ scores by 2D-ResNet18 for #Slice = 20, Input Channel = I, Output Setting = 1 (Experiment Number = 3). Plots from left to right correspond to samples from Autistic and Healthy controls, respectively.

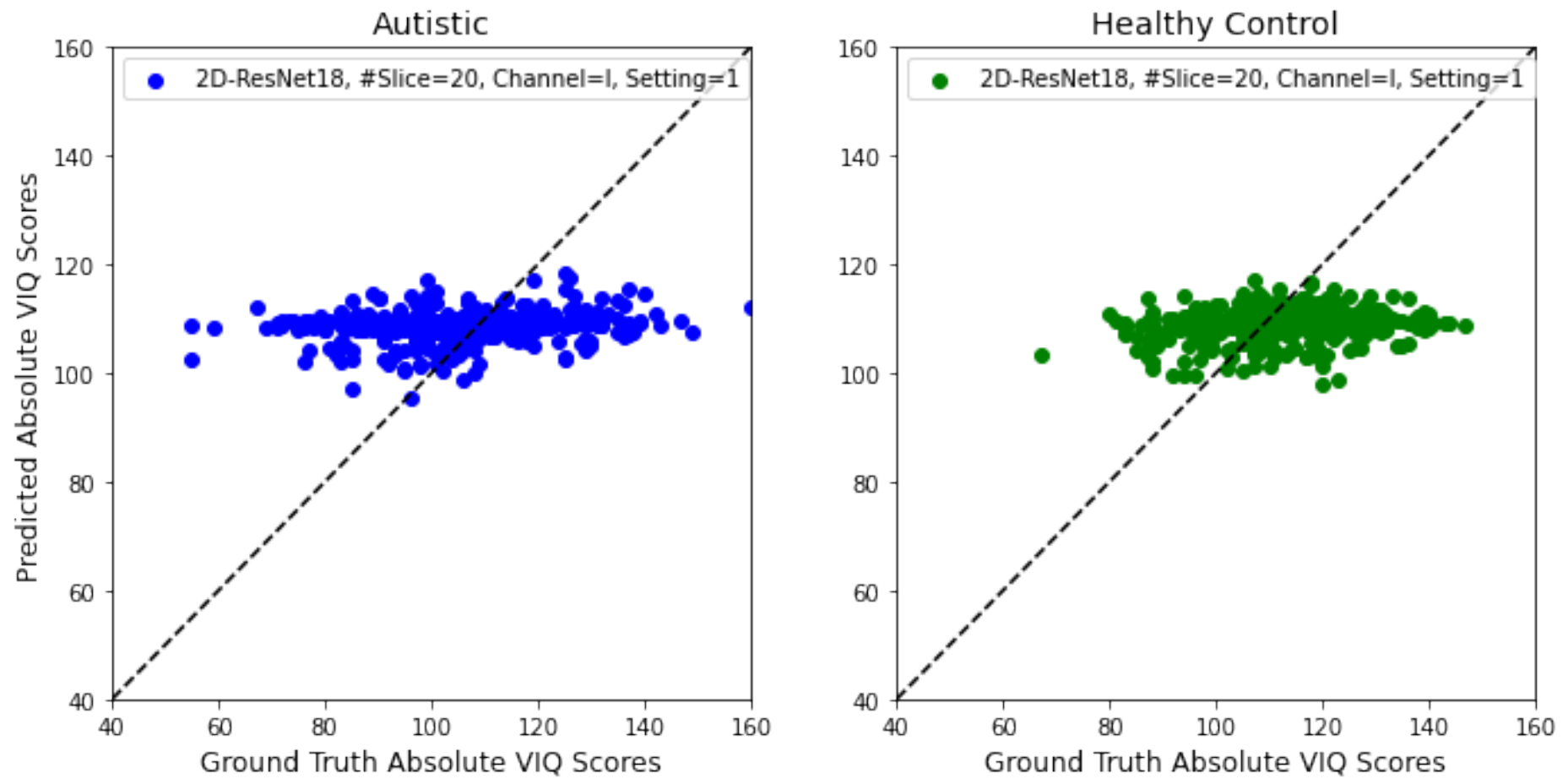


Figure 11: Scatter plot showing Predicted vs. Ground Truth absolute VIQ scores by 2D-ResNet18 for #Slice = 20, Input Channel = I, Output Setting = 1 (Experiment Number = 24). Plots from left to right correspond to samples from Autistic and Healthy controls, respectively.

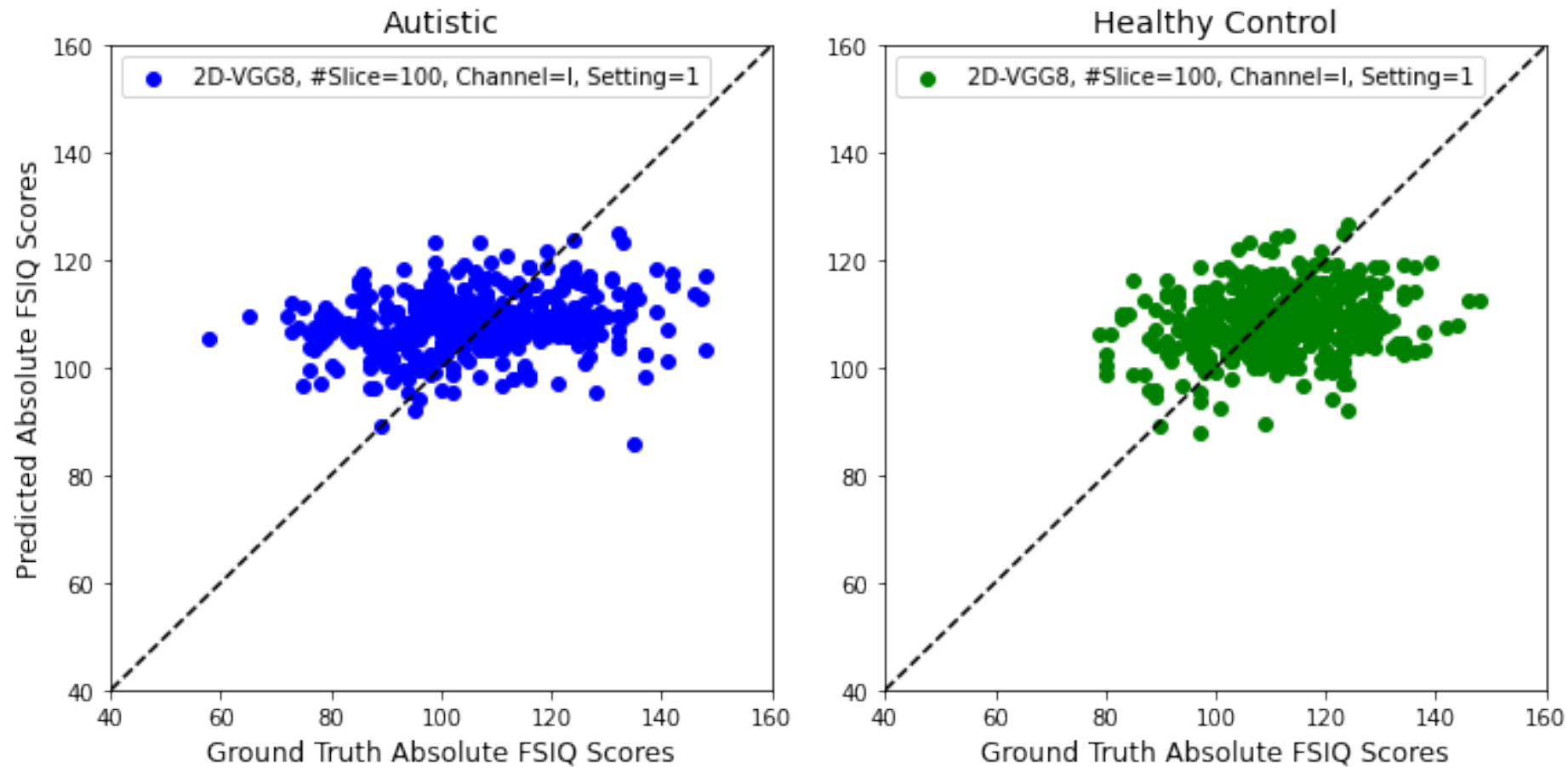


Figure 12: Scatter plot showing Predicted vs. Ground Truth absolute FSIQ scores by 2D-VGG8 for #Slice = 100, Input Channel = I, Output Setting = 1 (Experiment Number = 132). Plots from left to right correspond to samples from Autistic and Healthy controls, respectively.

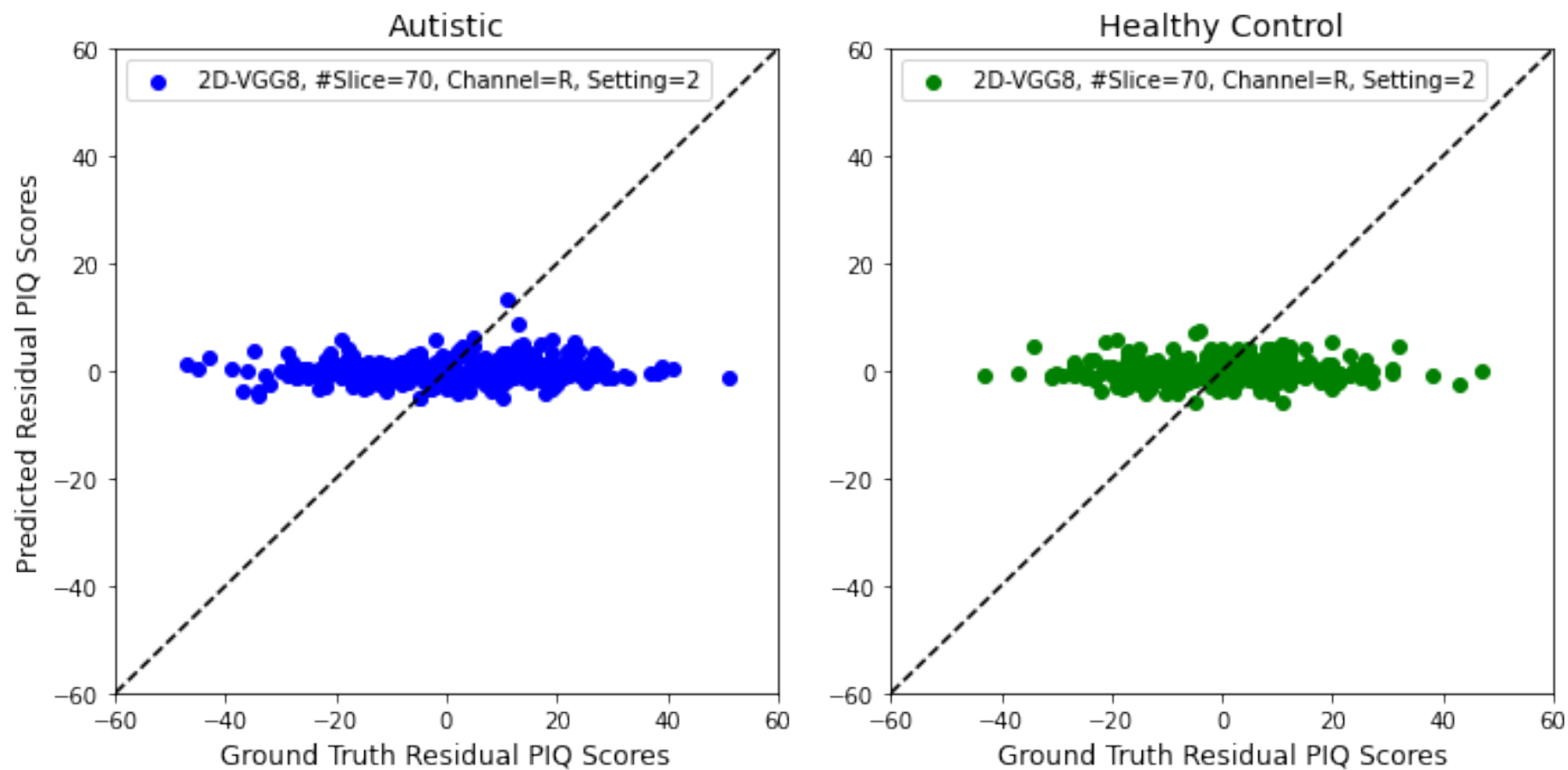


Figure 13: Scatter plot showing Predicted vs. Ground Truth residual PIQ scores by 2D-VGG8 for #Slice = 70, Input Channel = R, Output Setting = 2 (Experiment Number = 327). Plots from left to right correspond to samples from Autistic and Healthy controls, respectively.

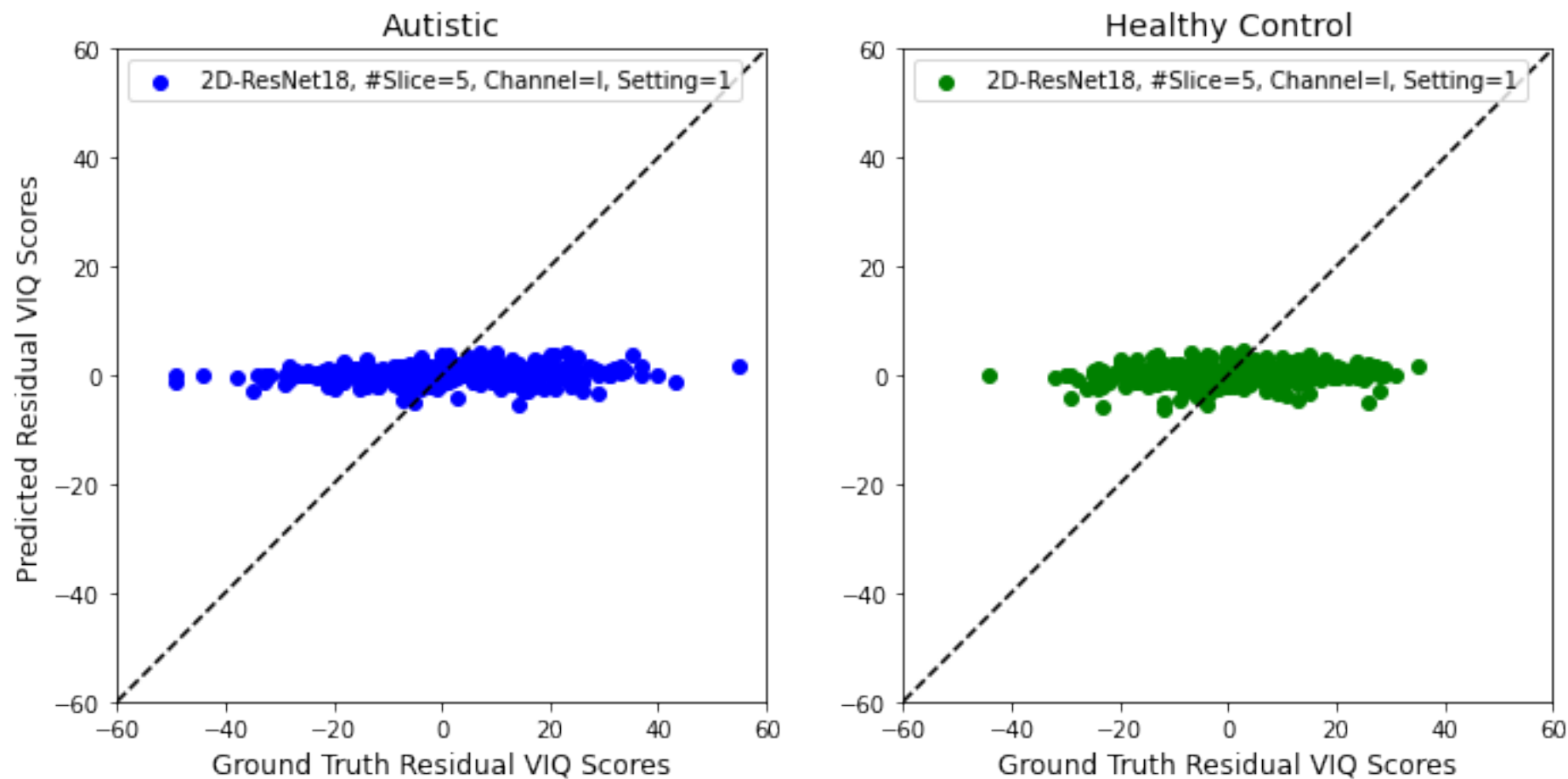


Figure 14: Scatter plot showing Predicted vs. Ground Truth residual VIQ scores by 2D-Resnet18 for #Slice = 5, Input Channel = I, Output Setting = 1 (Experiment Number = 190). Plots from left to right correspond to samples from Autistic and Healthy controls, respectively.

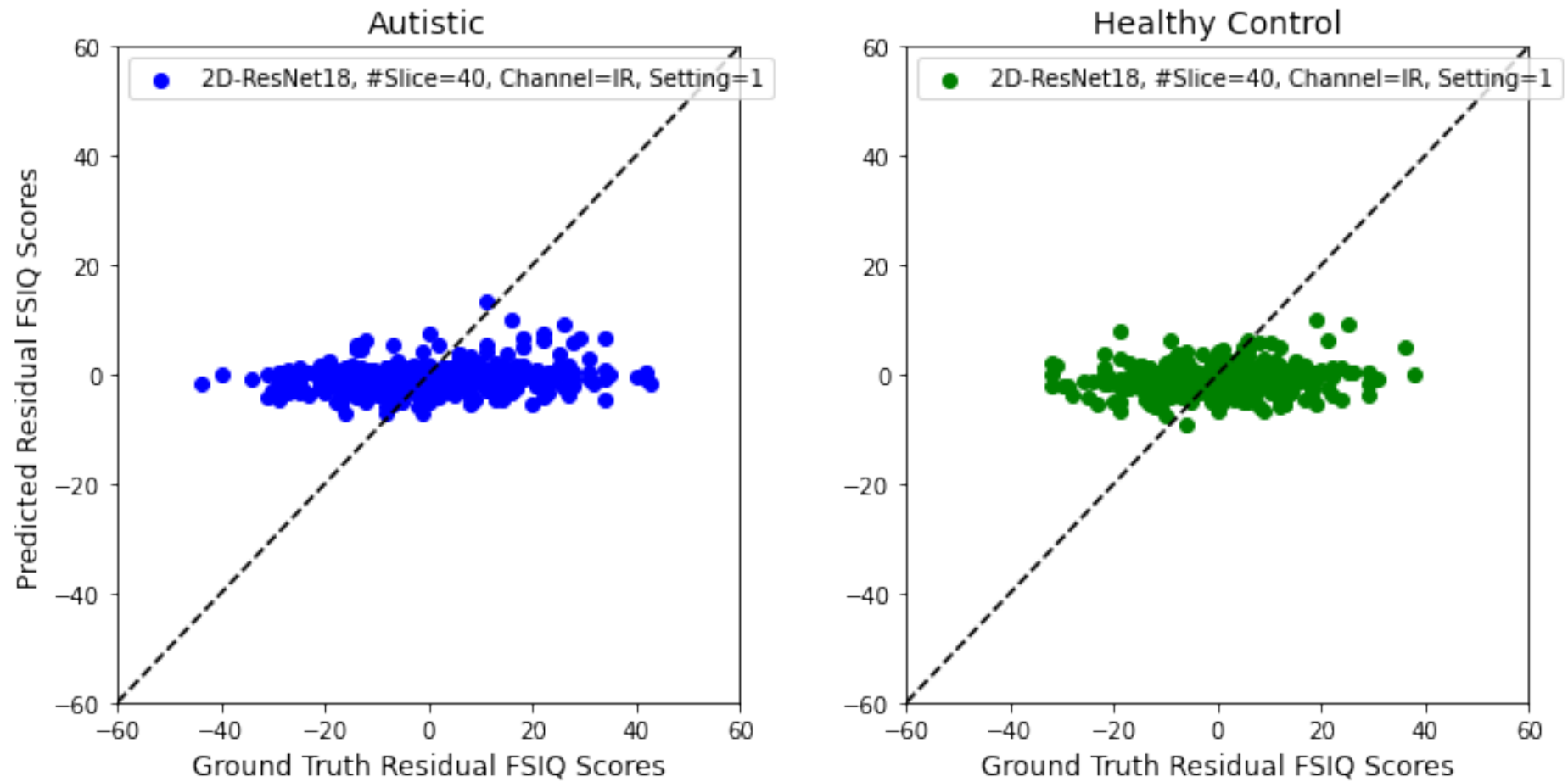


Figure 15: Scatter plot showing Predicted vs. Ground Truth residual FSIQ scores by 2D-Resnet18 for #Slice = 40, Input Channel = IR, Output Setting = 1 (Experiment Number = 228). Plots from left to right correspond to from Autistic and Healthy controls, respectively.