On-line Table 1A: Clinical characteristics of the discovery (optimal setting determination) and validation (diagnostic performance test) groups in test 1

	Discovery Group			Validation Group		
	AD (*n* = 142)	HS (*n* = 142)	*P* Value	AD (*n* = 16)	HS (*n* = 16)	*P* Value
Age (yr)	69 ± 8	68 ± 8	.772[a]	70 ± 7	68 ± 8	.550[a]
Onset age (yr)	67 ± 9	–		68 ± 7	–	
Sex (M/F)	73:69	80:62	.002[b]	7:9	7:9	1.000[b]
MMSE	21.7 ± 3.6	29.0 ± 0.7	<.001[a]	22.3 ± 3.6	29.3 ± 0.7	<.001[a]
CDR (0.5/1)	18/124	–		2/14	–	
Term of education (yr)	11.8 ± 2.6	12.3 ± 2.9	.100[c]	11.6 ± 2.6	12.3 ± 3.1	.541[c]

[a] ANOVA.
[b] χ^2 test.
[c] Kruskal-Wallis test.

On-line Table 1B: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 1 when the smoothing kernel was set to zero millmeters[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	77.03	<.001	85.14	<.001
	Posterior cingulate gyrus	8.75	.003	16.86	<.001
	Precuneus	2.13	.144		
	Hippocampus	50.14	<.001		
	Parahippocampus	24.85	<.001		
	Frontal lobe	0.02	.888		
	Occipital lobe	3.31	.069		
	Parietal lobe	3.81	.051		
	Temporal lobe	5.12	.024		
Age		0.08	.771		
Modulation −					
ROI	Amygdala	17.96	<.001		
	Posterior cingulate gyrus	13.55	<.001		
	Precuneus	3.79	.051		
	Hippocampus	111.92	<.001	111.92	<.001
	Parahippocampus	35.76	<.001		
	Frontal lobe	<.01	.948		
	Occipital lobe	0.03	.863		
	Parietal lobe	2.22	.136		
	Temporal lobe	2.83	.092		
Age		0.08	.771		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 1C: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 1 when the smoothing kernel was set to 4 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	87.65	<.001	88.98	<.001
	Posterior cingulate gyrus	6.78	.009		
	Precuneus	2.52	.113		
	Hippocampus	32.11	<.001		
	Parahippocampus	25.23	<.001		
	Frontal lobe	1.23	.267		
	Occipital lobe	1.72	.189		
	Parietal lobe	8.82	.003	18.46	<.001
	Temporal lobe	12.63	<.001		
Age		0.08	.771		
Modulation −					
ROI	Amygdala	32.40	<.001		
	Posterior cingulate gyrus	4.44	.035		
	Precuneus	3.51	.061		
	Hippocampus	106.22	<.001	106.22	<.001
	Parahippocampus	35.76	<.001		
	Frontal lobe	1.53	.216		
	Occipital lobe	0.24	.627		
	Parietal lobe	2.85	.091		
	Temporal lobe	10.51	.001		
Age		0.08	.771		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 1D: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 1 when the smoothing kernel was set to 8 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	77.46	<.001	92.25	<.001
	Posterior cingulate gyrus	4.33	.037		
	Precuneus	2.16	.141		
	Hippocampus	23.18	<.001		
	Parahippocampus	20.94	<.001		
	Frontal lobe	4.04	.044	8.07	.005
	Occipital lobe	1.80	.180		
	Parietal lobe	8.54	.004	21.36	<.001
	Temporal lobe	15.58	<.001		
Age		0.08	.771		
Modulation −					
ROI	Amygdala	55.10	<.001	5.79	.016
	Posterior cingulate gyrus	0.71	.399		
	Precuneus	2.30	.130		
	Hippocampus	94.24	<.001	43.03	<.001
	Parahippocampus	23.95	<.001		
	Frontal lobe	5.70	.017		
	Occipital lobe	0.01	.905		
	Parietal lobe	10.88	.001	9.04	.003
	Temporal lobe	17.48	<.001		
Age		0.08	.771		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 1E: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 1 when the smoothing kernel was set to 12 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	73.05	<.001	90.36	<.001
	Posterior cingulate gyrus	3.23	.072		
	Precuneus	2.47	.116		
	Hippocampus	19.21	<.001		
	Parahippocampus	15.42	<.001		
	Frontal lobe	4.91	.028	9.39	.002
	Occipital lobe	1.68	.195		
	Parietal lobe	10.70	.001	24.26	<.001
	Temporal lobe	18.63	<.001		
Age		0.08	.771		
Modulation −					
ROI	Amygdala	70.24	<.001	19.16	<.001
	Posterior cingulate gyrus	0.01	.938	8.89	.003
	Precuneus	1.47	.226		
	Hippocampus	61.34	<.001		
	Parahippocampus	12.89	<.001		
	Frontal lobe	7.66	.006		
	Occipital lobe	0.01	.904		
	Parietal lobe	11.07	.001	10.58	.001
	Temporal lobe	20.95	<.001		
Age		0.08	.771		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 1F: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 1 when the smoothing kernel was set to 16 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	67.03	<.001	84.69	<.001
	Posterior cingulate gyrus	2.27	.132		
	Precuneus	2.21	.137		
	Hippocampus	16.94	<.001		
	Parahippocampus	11.52	.001		
	Frontal lobe	5.13	.024	8.40	.004
	Occipital lobe	1.34	.248		
	Parietal lobe	12.01	.001	25.14	<.001
	Temporal lobe	21.71	<.001		
Age		0.08	.771		
Modulation −					
ROI	Amygdala	69.49	<.001	69.41	<.001
	Posterior cingulate gyrus	0.17	.681		
	Precuneus	1.80	.180		
	Hippocampus	37.71	<.001		
	Parahippocampus	7.11	.008		
	Frontal lobe	10.01	.002		
	Occipital lobe	0.30	.585		
	Parietal lobe	12.25	.001	12.16	.001
	Temporal lobe	24.18	<.001		
Age		0.08	.771		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 1G: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 1 when the smoothing kernel was set to 20 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	60.85	<.001	68.38	<.001
	Posterior cingulate gyrus	0.90	.343		
	Precuneus	1.85	.174		
	Hippocampus	16.51	<.001		
	Parahippocampus	10.00	.002	7.97	.005
	Frontal lobe	5.57	.018		
	Occipital lobe	1.48	.223		
	Parietal lobe	11.42	.001	23.74	<.001
	Temporal lobe	22.96	<.001	–	–
Age		0.08	.771	–	–
Modulation −					
ROI	Amygdala	61.79	<.001	63.27	<.001
	Posterior cingulate gyrus	0.52	.473		
	Precuneus	2.09	.148		
	Hippocampus	26.68	<.001		
	Parahippocampus	5.14	.023		
	Frontal lobe	8.87	.003		
	Occipital lobe	0.18	.669		
	Parietal lobe	11.18	.001	12.65	<.001
	Temporal lobe	21.98	<.001		
Age		0.08	.771		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

Table 1H: Optimal ROI and diagnostic performance expressed as area under the curve for each image-processing setting in test 1[a]

Image-Processing Condition			Likelihood Ratio		
Modulation	Smoothing Kernel Size (mm)	ROI	χ^2 Test Statistic	*P* Value	AUC
+	Nonsmoothed	Amygdala Posterior cingulate gyrus	93.89	<.001	0.891
+	4	Amygdala Parietal lobe	97.80	<.001	0.840
+	8	Amygdala Frontal lobe Parietal lobe	105.58	<.001	0.875
+	12	Amygdala Frontal lobe Parietal lobe	106.36	<.001	0.879
+	16	Amygdala Frontal lobe Parietal lobe	101.62	<.001	0.875
+	20	Amygdala Parahippocampus Parietal lobe	95.61	<.001	0.851
−	Nonsmoothed	Hippocampus	111.92	<.001	0.830
−	4	Hippocampus	106.22	<.001	0.766
−	8	Amygdala Hippocampus Parietal lobe	108.60	<.001	0.766
−	12	Amygdala Parietal lobe Posterior cingulate gyrus	81.18	<.001	0.848
−	16	Amygdala Parietal lobe	81.65	<.001	0.789
−	20	Amygdala Parietal lobe	74.45	<.001	0.773

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by multivariate logistic regression analyses.

On-line Table 2A: Clinical characteristics of the discovery (optimal setting determination) and validation (diagnostic performance test) groups in test 2

	Discovery Group			Validation Group		
	AD (*n* = 142)	HS (*n* = 142)	*P* Value	AD (*n* = 16)	HS (*n* = 16)	*P* Value
Age (yr)	69 ± 8	68 ± 8	.636[a]	68 ± 9	68 ± 8	.967[a]
Onset age (yr)	67 ± 8	–		67 ± 9	–	
Sex (M/F)	75:67	76:66	.905[b]	5:11	11:5	.104[b]
MMSE	21.8 ± 3.5	29.1 ± 0.7	<.001[a]	20.9 ± 3.9	29.2 ± 0.8	<.001[a]
CDR (0.5/1)	17/125	–		3/13	–	
Term of education (yr)	11.8 ± 2.6	12.3 ± 2.9	.127[c]	11.4 ± 2.7	12.4 ± 2.5	.322[c]

[a] ANOVA.
[b] χ^2 test.
[c] Kruskal-Wallis test.

On-line Table 2B: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 2 when the smoothing kernel was set to zero millimeters[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	91.24	<.001	96.63	<.001
	Posterior cingulate gyrus	12.57	.004	17.96	<.001
	Precuneus	2.04	.153		
	Hippocampus	53.37	<.001		
	Parahippocampus	33.79	<.001		
	Frontal lobe	0.07	.797		
	Occipital lobe	3.60	.058		
	Parietal lobe	2.35	.125		
	Temporal lobe	6.72	.001		
Age		0.23	.634		
Modulation −					
ROI	Amygdala	28.49	<.001		
	Posterior cingulate gyrus	14.77	<.001		
	Precuneus	5.45	.020	9.63	.002
	Hippocampus	103.92	<.001	108.09	<.001
	Parahippocampus	39.63	<.001		
	Frontal lobe	0.06	.800		
	Occipital lobe	0.143	.706		
	Parietal lobe	1.80	.180		
	Temporal lobe	3.80	.051		
Age		0.23	.634		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 2C: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 2 when the smoothing kernel was set to 4 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	87.68	<.001	93.92	<.001
	Posterior cingulate gyrus	10.11	.002	14.34	<.001
	Precuneus	1.63	.202		
	Hippocampus	35.43	<.001		
	Parahippocampus	34.96	<.001		
	Frontal lobe	1.96	.161		
	Occipital lobe	2.34	.126		
	Parietal lobe	5.82	.016		
	Temporal lobe	13.51	<.001		
Age		0.23	.634		
Modulation −					
ROI	Amygdala	47.20	<.001		
	Posterior cingulate gyrus	14.77	<.001		
	Precuneus	4.53	.033	6.82	.009
	Hippocampus	96.63	<.001	63.05	<.001
	Parahippocampus	41.88	<.001	7.30	.007
	Frontal lobe	1.63	.201		
	Occipital lobe	0.10	.756		
	Parietal lobe	2.21	.137		
	Temporal lobe	10.73	.001		
Age		0.23	.634		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 2D: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 2 when the smoothing kernel was set to 8 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	84.36	<.001	97.99	<.001
	Posterior cingulate gyrus	7.25	.007		
	Precuneus	1.00	.317		
	Hippocampus	28.32	<.001		
	Parahippocampus	29.66	<.001		
	Frontal lobe	4.91	.027	8.36	.004
	Occipital lobe	2.41	.121		
	Parietal lobe	6.13	.013	17.35	<.001
	Temporal lobe	16.30	<.001		
Age		0.23	.634		
Modulation −					
ROI	Amygdala	65.74	<.001	11.00	.001
	Posterior cingulate gyrus	1.32	.249		
	Precuneus	3.19	.074		
	Hippocampus	85.20	<.001	28.64	<.001
	Parahippocampus	25.65	<.001		
	Frontal lobe	5.51	.019		
	Occipital lobe	0.11	.731		
	Parietal lobe	9.38	.002	6.46	.011
	Temporal lobe	18.27	<.001		
Age		0.23	.634		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 2E: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 2 when the smoothing kernel was set to 12 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	79.87	<.001	96.35	<.001
	Posterior cingulate gyrus	5.30	.021		
	Precuneus	0.86	.354		
	Hippocampus	24.99	<.001		
	Parahippocampus	22.61	<.001		
	Frontal lobe	5.58	.018	9.38	.002
	Occipital lobe	2.41	.120		
	Parietal lobe	8.09	.004	20.53	<.001
	Temporal lobe	19.06	<.001		
Age		0.23	.634		
Modulation −					
ROI	Amygdala	75.96	<.001	24.07	<.001
	Posterior cingulate gyrus	0.06	.800	6.08	.014
	Precuneus	2.40	.121		
	Hippocampus	59.64	<.001		
	Parahippocampus	14.60	<.001		
	Frontal lobe	7.66	.006		
	Occipital lobe	0.23	.632		
	Parietal lobe	11.32	.001	9.75	.002
	Temporal lobe	23.46	<.001		
Age		0.23	.634		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 2F: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 2 when the smoothing kernel was set to 16 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	73.95	<.001	90.48	<.001
	Posterior cingulate gyrus	3.63	.057		
	Precuneus	0.70	.404		
	Hippocampus	22.30	<.001		
	Parahippocampus	17.85	<.001		
	Frontal lobe	5.27	.022	7.69	.006
	Occipital lobe	1.86	.172		
	Parietal lobe	9.92	.002	21.67	<.001
	Temporal lobe	20.19	<.001		
Age		0.23	.634		
Modulation −					
ROI	Amygdala	72.61	<.001	72.78	<.001
	Posterior cingulate gyrus	0.54	.461		
	Precuneus	2.84	.092		
	Hippocampus	39.25	<.001		
	Parahippocampus	8.68	.003		
	Frontal lobe	10.31	.001		
	Occipital lobe	1.02	.313		
	Parietal lobe	13.42	<.001	13.59	<.001
	Temporal lobe	26.37	<.001		
Age		0.23	.634		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 2G: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 2 when the smoothing kernel was set to 20 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	67.37	<.001	81.71	<.001
	Posterior cingulate gyrus	1.58	.209		
	Precuneus	0.56	.454		
	Hippocampus	22.12	<.001		
	Parahippocampus	16.02	<.001		
	Frontal lobe	4.49	.034		
	Occipital lobe	1.85	.174		
	Parietal lobe	10.68	.001	25.02	<.001
	Temporal lobe	21.67	<.001		
Age		0.23	.634		
Modulation −					
ROI	Amygdala	63.80	<.001	65.72	<.001
	Posterior cingulate gyrus	0.56	.455		
	Precuneus	3.37	.067		
	Hippocampus	28.81	<.001		
	Parahippocampus	7.46	.006		
	Frontal lobe	9.71	.002		
	Occipital lobe	1.13	.288		
	Parietal lobe	13.56	<.001	15.48	<.001
	Temporal lobe	23.47	<.001		
Age		0.23	.634		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 2H: Optimal ROI and diagnostic performance expressed as area under the curve for each image-processing setting in test 2[a]

Image-Processing Condition			Likelihood Ratio		
Modulation	Smoothing Kernel Size (mm)	ROI	χ^2 Test Statistic	*P* Value	AUC
+	Nonsmoothed	Amygdala Posterior cingulate gyrus	109.20	<.001	0.680
+	4	Amygdala Posterior cingulate gyrus	104.03	<.001	0.711
+	8	Amygdala Frontal lobe Parietal lobe	109.31	<.001	0.844
+	12	Amygdala Frontal lobe Parietal lobe	109.95	<.001	0.859
+	16	Amygdala Frontal lobe Parietal lobe	105.00	<.001	0.852
+	20	Amygdala Parietal lobe	92.39	<.001	0.797
−	Nonsmoothed	Hippocampus Precuneus	113.55	<.001	0.945
−	4	Hippocampus Precuneus Parahippocampus	110.23	<.001	0.926
−	8	Amygdala Hippocampus Parietal lobe	102.21	<.001	0.918
−	12	Amygdala Posterior cingulate gyrus Parietal lobe	86.38	<.001	0.742
−	16	Amygdala Parietal lobe	86.20	<.001	0.719
−	20	Amygdala Parietal lobe	79.28	<.001	0.723

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by multivariate logistic regression analyses.

On-line Table 3A: Clinical characteristics of the discovery (optimal setting determination) and validation (diagnostic performance test) groups in test 3

	Discovery Group			Validation Group		
	AD (*n* = 142)	HS (*n* = 142)	*P* Value	AD (*n* = 16)	HS (*n* = 16)	*P* Value
Age (yr)	69 ± 8	68 ± 8	.588[a]	68 ± 9	68 ± 6	.856[a]
Onset age (yr)	67 ± 8	–		66 ± 9	–	
Sex (M/F)	74:68	77:65	.721[b]	6:10	10:6	.155[b]
MMSE	21.8 ± 3.6	29.1 ± 0.7	<.00[a]	21.0 ± 3.3	29.3 ± 0.8	<.0001[a]
CDR (0.5/1)	17/125	–		3/13	–	
Term of education (yr)	11.7 ± 2.6	12.2 ± 2.9	.132[c]	11.9 ± 2.4	12.9 ± 2.8	.288[c]

[a] ANOVA.
[b] χ^2 test.
[c] Kruskal-Wallis test.

On-line Table 3B: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 3 when the smoothing kernel was set to zero millimeters[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	75.26	<.001	81.58	<.001
	Posterior cingulate gyrus	12.21	.001	18.53	<.001
	Precuneus	3.73	.053		
	Hippocampus	46.44	<.001		
	Parahippocampus	28.30	<.001		
	Frontal lobe	<.01	.977		
	Occipital lobe	4.79	.029		
	Parietal lobe	2.97	.085		
	Temporal lobe	6.43	.011		
Age		0.30	.586		
Modulation −					
ROI	Amygdala	19.00	<.001		
	Posterior cingulate gyrus	16.64	<.001		
	Precuneus	8.30	.004	12.91	<.001
	Hippocampus	107.85	<.001	112.46	<.001
	Parahippocampus	33.70	<.001		
	Frontal lobe	0.28	.594		
	Occipital lobe	<.01	.965		
	Parietal lobe	2.46	.117		
	Temporal lobe	3.69	.055		
Age		0.30	.586		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 3C: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 3 when the smoothing kernel was set to 4 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	74.17	<.001	84.64	<.001
	Posterior cingulate gyrus	9.15	.003	5.67	.017
	Precuneus	3.10	.078		
	Hippocampus	28.07	<.001		
	Parahippocampus	29.47	<.001		
	Frontal lobe	1.00	.317		
	Occipital lobe	2.73	.099		
	Parietal lobe	7.31	.007	7.48	.006
	Temporal lobe	13.41	.003		
Age		0.30	.586		
Modulation −					
ROI	Amygdala	29.86	<.001		
	Posterior cingulate gyrus	7.15	.008		
	Precuneus	4.19	.041	9.88	.002
	Hippocampus	83.23	<.001	69.40	<.001
	Parahippocampus	35.24	<.001	6.50	.013
	Frontal lobe	1.37	.242		
	Occipital lobe	0.917	.338		
	Parietal lobe	2.08	.150		
	Temporal lobe	9.25	.002		
Age		0.30	.586		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 3D: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 3 when the smoothing kernel was set to 8 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	71.16	<.001	80.78	<.001
	Posterior cingulate gyrus	6.76	.009		
	Precuneus	2.00	.158		
	Hippocampus	19.69	<.001		
	Parahippocampus	24.59	<.001		
	Frontal lobe	3.27	.071		
	Occipital lobe	2.80	.094		
	Parietal lobe	7.53	.006	17.15	<.001
	Temporal lobe	17.30	<.001		
Age		0.30	.586		
Modulation −					
ROI	Amygdala	48.66	<.001	5.84	.002
	Posterior cingulate gyrus	2.19	.139		
	Precuneus	4.19	.041	7.98	.005
	Hippocampus	83.23	<.001		
	Parahippocampus	21.85	<.001		
	Frontal lobe	5.28	.022		
	Occipital lobe	0.10	.758		
	Parietal lobe	7.93	.005	41.85	<.001
	Temporal lobe	16.95	<.001		
Age		0.30	.586		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 3E: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 3 when the smoothing kernel was set to 12 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	67.31	<.001	84.24	<.001
	Posterior cingulate gyrus	5.76	.016		
	Precuneus	1.93	.165		
	Hippocampus	16.64	<.001		
	Parahippocampus	17.10	<.001		
	Frontal lobe	3.98	.046	9.57	.002
	Occipital lobe	2.93	.087		
	Parietal lobe	10.24	.001	21.64	<.001
	Temporal lobe	20.33	<.001		
Age		0.30	.586		
Modulation −					
ROI	Amygdala	61.24	<.001	15.33	<.001
	Posterior cingulate gyrus	0.15	.700		
	Precuneus	2.46	.117		
	Hippocampus	54.63	<.001	8.62	.003
	Parahippocampus	10.82	.001		
	Frontal lobe	7.51	.006		
	Occipital lobe	0.04	.834		
	Parietal lobe	8.46	.004	7.43	.006
	Temporal lobe	21.22	<.001		
Age		0.30	.586		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 3F: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 3 when the smoothing kernel was set to 16 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	62.12	<.001	75.24	<.001
	Posterior cingulate gyrus	4.69	.030		
	Precuneus	1.60	.206		
	Hippocampus	15.21	<.001		
	Parahippocampus	12.10	.001		
	Frontal lobe	3.74	.053		
	Occipital lobe	2.43	.119		
	Parietal lobe	12.16	.001	25.28	<.001
	Temporal lobe	21.26	<.001		
Age		0.30	.586		
Modulation −					
ROI	Amygdala	59.52	<.001	58.96	<.001
	Posterior cingulate gyrus	0.02	.891		
	Precuneus	2.47	.116		
	Hippocampus	31.91	<.001		
	Parahippocampus	5.00	.025		
	Frontal lobe	9.37	.002		
	Occipital lobe	0.02	.875		
	Parietal lobe	9.30	.002	8.74	.003
	Temporal lobe	23.46	<.001		
Age		0.30	.586		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 3G: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 3 when the smoothing kernel was set to 20 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	55.06	<.001	68.77	<.001
	Posterior cingulate gyrus	2.32	.128		
	Precuneus	1.33	.249		
	Hippocampus	14.95	.001		
	Parahippocampus	9.43	.002		
	Frontal lobe	3.74	.053		
	Occipital lobe	2.14	.143		
	Parietal lobe	12.19	.001	26.90	<.001
	Temporal lobe	21.47	<.001		
Age		0.30	.586		
Modulation −					
ROI	Amygdala	53.11	<.001	53.44	<.001
	Posterior cingulate gyrus	0.05	.824		
	Precuneus	2.86	.091		
	Hippocampus	22.31	<.001		
	Parahippocampus	3.89	.049		
	Frontal lobe	9.29	.002		
	Occipital lobe	0.05	.827		
	Parietal lobe	9.65	.002	9.97	.002
	Temporal lobe	22.35	<.001		
Age		0.30	.586		

[a] Likelihood ratio χ^2 test statistic and P values determined by univariate and multivariate logistic regression analyses.

On-line Table 3H: Optimal ROI and diagnostic performance expressed as area under the curve for each image-processing setting in test 3[a]

Image-Processing Condition			Likelihood Ratio		
Modulation	Smoothing Kernel Size (mm)	ROI	χ^2 Test Statistic	*P* Value	AUC
+	Nonsmoothed	Amygdala Posterior cingulate gyrus	93.80	<.001	0.933
+	4	Amygdala Posterior cingulate gyrus Parietal lobe	96.19	<.001	0.957
+	8	Amygdala Parietal lobe	88.31	<.001	0.965
+	12	Amygdala Frontal lobe Parietal lobe	98.55	<.001	0.957
+	16	Amygdala Parietal lobe	68.25	<.001	0.930
+	20	Amygdala Parietal lobe	81.96	<.001	0.918
−	Nonsmoothed	Hippocampus Precuneus	120.76	<.001	0.869
−	4	Hippocampus Precuneus Parahippocampus	112.75	<.001	0.871
−	8	Amygdala Hippocampus Precuneus	96.36	<.001	0.918
−	12	Amygdala Hippocampus Parietal lobe	77.32	<.001	0.988
−	16	Amygdala Parietal lobe	68.25	<.001	0.984
−	20	Amygdala Parietal lobe	63.08	<.001	0.965

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by multivariate logistic regression analyses.

On-line Table 4A: Clinical characteristics of the discovery (optimal setting determination) and validation (diagnostic performance test) groups in test 4

	Discovery Group			Validation Group		
	AD (*n* = 142)	HS (*n* = 142)	*P* Value	AD (*n* = 16)	HS (*n* = 16)	*P* Value
Age (yr)	69 ± 8	68 ± 8	.155[a]	69 ± 9	68 ± 9	.800[a]
Onset age (yr)	67 ± 8	–		67 ± 9	–	
Sex (M/F)	70:72	77:65	.406[b]	10:6	10:6	1.000[b]
MMSE	21.7 ± 3.6	29.1 ± 0.7	<.001[a]	21.8 ± 3.6	28.8 ± 0.7	<.001[a]
CDR (0.5/1)	18/124	–		2/14	–	
Term of education (yr)	11.7 ± 2.5	12.2 ± 2.8	.095[c]	11.9 ± 3.1	12.6 ± 3.7	.573[c]

[a] ANOVA.
[b] χ^2 test.
[c] Kruskal-Wallis test.

On-line Table 4B: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 4 when the smoothing kernel was set to zero millimeters[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	88.75	<.001	94.95	<.001
	Posterior cingulate gyrus	8.46	.004	14.66	<.001
	Precuneus	2.41	.120		
	Hippocampus	56.76	<.001		
	Parahippocampus	31.23	<.001		
	Frontal lobe	0.13	.715		
	Occipital lobe	3.65	.056		
	Parietal lobe	1.99	.159		
	Temporal lobe	7.65	.006		
Age		0.16	.693		
Modulation −					
ROI	Amygdala	24.68	<.001		
	Posterior cingulate gyrus	14.40	<.001		
	Precuneus	5.92	.015	12.50	<.001
	Hippocampus	113.54	<.001	120.13	<.001
	Parahippocampus	37.25	<.001		
	Frontal lobe	0.53	.467		
	Occipital lobe	0.01	.754		
	Parietal lobe	2.98	.084		
	Temporal lobe	6.07	.014		
Age		0.16	.693		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 4C: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 4 when the smoothing kernel was set to 4 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	87.65	<.001	95.65	<.001
	Posterior cingulate gyrus	6.31	.012		
	Precuneus	2.04	.154		
	Hippocampus	36.12	<.001		
	Parahippocampus	31.43	<.001		
	Frontal lobe	2.01	.156		
	Occipital lobe	2.37	.124		
	Parietal lobe	4.49	.034	12.49	<.001
	Temporal lobe	14.72	<.001		
Age		0.16	.693		
Modulation −					
ROI	Amygdala	37.61	<.001	6.06	.014
	Posterior cingulate gyrus	5.05	.025		
	Precuneus	4.83	.028	8.49	.004
	Hippocampus	104.06	<.001	73.28	<.001
	Parahippocampus	36.11	<.001		
	Frontal lobe	1.95	.162		
	Occipital lobe	<.01	.992		
	Parietal lobe	2.83	.093		
	Temporal lobe	10.98	.001		
Age		0.16	.693		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 4D: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 4 when the smoothing kernel was set to 8 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	83.64	<.001	53.71	<.001
	Posterior cingulate gyrus	4.16	.041		
	Precuneus	1.39	.239		
	Hippocampus	27.03	<.001		
	Parahippocampus	27.00	<.001		
	Frontal lobe	4.56	.033	8.47	.004
	Occipital lobe	2.77	.096		
	Parietal lobe	5.14	.023	12.87	<.001
	Temporal lobe	17.22	<.001		
Age		0.16	.693		
Modulation −					
ROI	Amygdala	60.58	<.001	8.19	.004
	Posterior cingulate gyrus	1.05	.307		
	Precuneus	3.48	.062		
	Hippocampus	93.52	<.001	31.83	<.001
	Parahippocampus	23.46	<.001		
	Frontal lobe	6.15	.013		
	Occipital lobe	<.01	.992		
	Parietal lobe	11.54	.001	7.82	.005
	Temporal lobe	21.39	<.001		
Age		0.16	.693		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 4E: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 4 when the smoothing kernel was set to 12 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	78.10	<.001	94.77	<.001
	Posterior cingulate gyrus	3.34	.068		
	Precuneus	1.67	.196		
	Hippocampus	22.89	<.001		
	Parahippocampus	20.22	<.001		
	Frontal lobe	5.41	.020	10.24	.001
	Occipital lobe	2.85	.091		
	Parietal lobe	7.55	.006	20.09	<.001
	Temporal lobe	20.00	<.001		
Age		0.16	.693		
Modulation −					
ROI	Amygdala	76.27	<.001	23.45	<.001
	Posterior cingulate gyrus	<.01	.984		
	Precuneus	2.14	.143		
	Hippocampus	63.43	<.001	8.96	.003
	Parahippocampus	13.81	.002		
	Frontal lobe	7.51	.006		
	Occipital lobe	<.01	.969		
	Parietal lobe	12.76	<.001	10.58	.001
	Temporal lobe	23.90	<.001		
Age		0.16	.693		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 4F: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 4 when the smoothing kernel was set to 16 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	71.87	<.001	89.52	<.001
	Posterior cingulate gyrus	2.59	.107		
	Precuneus	1.59	.207		
	Hippocampus	20.49	<.001		
	Parahippocampus	15.66	.001		
	Frontal lobe	5.15	.023	8.83	.003
	Occipital lobe	2.56	.110		
	Parietal lobe	9.61	.002	22.27	<.001
	Temporal lobe	20.94	<.001		
Age		0.16	.693		
Modulation −					
ROI	Amygdala	74.27	<.001	72.77	<.001
	Posterior cingulate gyrus	0.45	.501		
	Precuneus	2.44	.118		
	Hippocampus	39.90	<.001		
	Parahippocampus	7.35	.007		
	Frontal lobe	8.57	.003		
	Occipital lobe	0.12	.731		
	Parietal lobe	14.50	<.001	13.00	<.001
	Temporal lobe	26.02	<.001		
Age		0.16	.693		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 4G: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 4 when the smoothing kernel was set to 20 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	65.18	<.001	66.87	<.001
	Posterior cingulate gyrus	0.90	.343		
	Precuneus	1.43	.231		
	Hippocampus	20.24	<.001		
	Parahippocampus	13.42	<.001	6.48	.011
	Frontal lobe	4.97	.026		
	Occipital lobe	2.46	.117		
	Parietal lobe	10.06	.002	22.58	<.001
	Temporal lobe	21.89	<.001		
Age		0.16	.693		
Modulation −					
ROI	Amygdala	66.54	<.001	66.86	<.001
	Posterior cingulate gyrus	0.62	.431		
	Precuneus	2.66	.103		
	Hippocampus	29.40	<.001		
	Parahippocampus	5.83	.016		
	Frontal lobe	7.78	.005		
	Occipital lobe	0.11	.744		
	Parietal lobe	14.13	<.001	14.44	<.001
	Temporal lobe	24.64	<.001		
Age		0.16	.693		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 4H: Optimal ROI and diagnostic performance expressed as area under the curve for each image-processing setting in test 4[a]

Image-Processing Condition					
Modulation	Smoothing Kernel Size (mm)	ROI	Likelihood Ratio χ^2 Test Statistic	*P* Value	AUC
+	Nonsmoothed	Amygdala Posterior cingulate gyrus	103.41	<.001	0.766
+	4	Amygdala Parietal lobe	100.14	<.001	0.855
+	8	Amygdala Frontal lobe Parietal lobe	107.08	<.001	0.871
+	12	Amygdala Frontal lobe Parietal lobe	108.09	<.001	0.875
+	16	Amygdala Frontal lobe Parietal lobe	105.05	<.001	0.871
+	20	Amygdala Parahippocampus Parietal lobe	96.92	<.001	0.828
−	Nonsmoothed	Hippocampus Precuneus	126.04	<.001	0.756
−	4	Amygdala Hippocampus Precuneus	117.48	<.001	0.781
−	8	Amygdala Hippocampus Parietal lobe	110.40	<.001	0.752
−	12	Amygdala Hippocampus Parietal lobe	96.46	<.001	0.711
−	16	Amygdala Parietal lobe	87.27	<.001	0.684
−	20	Amygdala Parietal lobe	80.99	<.001	0.660

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by multivariate logistic regression analyses.

On-line Table 5A: Clinical characteristics of the discovery (optimal setting determination) and validation (diagnostic performance test) groups in test 5

	Discovery Group			Validation Group		
	AD (*n* = 142)	HS (*n* = 142)	*P* Value	AD (*n* = 16)	HS (*n* = 16)	*P* Value
Age (yr)	69 ± 8	68 ± 8	.458[a]	68 ± 8	71 ± 7	.416[a]
Onset age (yr)	67 ± 8	–		66 ± 8	–	
Sex (M/F)	69:73	79:63	.004[b]	11:5	8:8	.027[b]
MMSE	21.7 ± 3.7	29.1 ± 0.7	<.001[a]	22.5 ± 2.9	28.9 ± 0.7	<.00[a]
CDR (0.5/1)	17/125	–		3/13	–	
Term of education (yr)	11.7 ± 2.5	12.3 ± 2.9	.061[c]	12.2 ± 2.9	12.1 ± 3.0	1.000[c]

[a] ANOVA.
[b] χ^2 test.
[c] Kruskal-Wallis test.

On-line Table 5B: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 5 when the smoothing kernel was set to zero millimeters[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	81.82	<.001	88.03	<.001
	Posterior cingulate gyrus	8.45	.004	14.66	<.001
	Precuneus	1.47	.225		
	Hippocampus	47.75	<.001		
	Parahippocampus	28.22	<.001		
	Frontal lobe	0.01	.897		
	Occipital lobe	3.47	.062		
	Parietal lobe	2.34	.126		
	Temporal lobe	6.66	.001		
Age		0.56	.456		
Modulation −					
ROI	Amygdala	22.65	<.001		
	Posterior cingulate gyrus	13.10	<.001		
	Precuneus	5.19	.023	12.37	<.001
	Hippocampus	108.01	<.001	115.19	<.001
	Parahippocampus	34.95	<.001		
	Frontal lobe	0.26	.610		
	Occipital lobe	<.01	.982		
	Parietal lobe	1.61	.204		
	Temporal lobe	2.89	.089		
Age		0.56	.456		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 5C: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 5 when the smoothing kernel was set to 4 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	81.67	<.001	90.47	<.001
	Posterior cingulate gyrus	6.25	.012		
	Precuneus	1.04	.307		
	Hippocampus	29.13	<.001		
	Parahippocampus	28.85	<.001		
	Frontal lobe	1.85	.174		
	Occipital lobe	1.71	.191		
	Parietal lobe	6.74	.009	15.54	<.001
	Temporal lobe	15.01	<.001		
Age		0.56	.456		
Modulation −					
ROI	Amygdala	37.84	<.001		
	Posterior cingulate gyrus	13.10	<.001		
	Precuneus	4.63	.031	9.86	.002
	Hippocampus	108.01	<.001	70.59	<.001
	Parahippocampus	34.95	<.001	8.60	.003
	Frontal lobe	2.55	.111		
	Occipital lobe	0.59	.441		
	Parietal lobe	2.22	.136		
	Temporal lobe	10.44	.001		
Age		0.56	.456		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 5D: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 5 when the smoothing kernel was set to 8 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	78.73	<.001	93.02	<.001
	Posterior cingulate gyrus	4.27	.039		
	Precuneus	0.34	.561		
	Hippocampus	21.46	<.001		
	Parahippocampus	23.18	<.001		
	Frontal lobe	4.79	.028	8.48	.004
	Occipital lobe	2.05	.152		
	Parietal lobe	6.66	.010	19.40	<.001
	Temporal lobe	18.78	<.001		
Age		0.56	.456		
Modulation −					
ROI	Amygdala	55.80	<.001	8.85	.003
	Posterior cingulate gyrus	0.38	.540		
	Precuneus	2.01	.156		
	Hippocampus	83.73	<.001	39.40	<.001
	Parahippocampus	22.37	<.001		
	Frontal lobe	6.67	.009		
	Occipital lobe	0.02	.884		
	Parietal lobe	9.04	.003	7.31	.007
	Temporal lobe	18.81	<.001		
Age		0.56	.456		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 5E: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 5 when the smoothing kernel was set to 12 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	73.82	<.001	92.28	<.001
	Posterior cingulate gyrus	3.06	.080		
	Precuneus	0.443	.506		
	Hippocampus	17.63	<.001		
	Parahippocampus	15.96	<.001		
	Frontal lobe	5.81	.016	10.44	.001
	Occipital lobe	2.00	.158		
	Parietal lobe	9.07	.003	23.86	<.001
	Temporal lobe	21.82	<.001		
Age		0.56	.456		
Modulation −					
ROI	Amygdala	69.18	<.001	21.86	<.001
	Posterior cingulate gyrus	0.19	.662	7.52	.006
	Precuneus	0.70	.404		
	Hippocampus	56.26	.001		
	Parahippocampus	11.97	.001		
	Frontal lobe	8.76	.003		
	Occipital lobe	<.01	.997		
	Parietal lobe	9.55	.002	9.03	.003
	Temporal lobe	21.75	<.001		
Age		0.56	.456		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 5F: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 5 when the smoothing kernel was set to 16 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	67.35	<.001	86.92	<.001
	Posterior cingulate gyrus	2.03	.154		
	Precuneus	0.46	.498		
	Hippocampus	15.10	<.001		
	Parahippocampus	11.00	.001		
	Frontal lobe	5.58	.018	8.98	.003
	Occipital lobe	1.39	.238		
	Parietal lobe	11.52	.001	26.52	<.001
	Temporal lobe	23.29	<.001		
Age		0.56	.456		
Modulation −					
ROI	Amygdala	67.10	<.001	67.35	<.001
	Posterior cingulate gyrus	2.03	.154		
	Precuneus	2.01	.156		
	Hippocampus	34.52	<.001		
	Parahippocampus	5.54	.019		
	Frontal lobe	10.83	.001		
	Occipital lobe	0.03	.853		
	Parietal lobe	10.63	.001	10.88	.001
	Temporal lobe	25.21	<.001		
Age		0.56	.456		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 5G: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 5 when the smoothing kernel was set to 20 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	60.25	<.001	69.29	<.001
	Posterior cingulate gyrus	0.56	.453		
	Precuneus	0.57	.452		
	Hippocampus	14.54	<.001		
	Parahippocampus	8.65	.003	7.27	.007
	Frontal lobe	5.18	.023		
	Occipital lobe	0.72	.397		
	Parietal lobe	12.62	<.001	25.90	<.001
	Temporal lobe	25.77	<.001		
Age		0.56	.456		
Modulation −					
ROI	Amygdala	59.19	<.001	60.70	<.001
	Posterior cingulate gyrus	0.90	.342		
	Precuneus	0.80	.371		
	Hippocampus	23.35	<.001		
	Parahippocampus	3.33	.068		
	Frontal lobe	9.22	.002		
	Occipital lobe	<.01	.973		
	Parietal lobe	10.89	.001	12.40	<.001
	Temporal lobe	23.73	<.001		
Age		0.56	.456		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 5H: Optimal ROI and diagnostic performance expressed as area under the curve for each image-processing setting in test 5[a]

Image-Processing Condition			Likelihood Ratio		
Modulation	Smoothing Kernel Size (mm)	ROI	χ^2 Test Statistic	*P* Value	AUC
+	Nonsmoothed	Amygdala Posterior cingulate gyrus	96.48	<.001	0.895
+	4	Amygdala Parietal lobe	97.20	<.001	0.857
+	8	Amygdala Frontal lobe Parietal lobe	105.18	<.001	0.887
+	12	Amygdala Frontal lobe Parietal lobe	107.52	<.001	0.875
+	16	Amygdala Frontal lobe Parietal lobe	103.76	<.001	0.871
+	20	Amygdala Parahippocampus Parietal lobe	97.09	<.001	0.813
−	Nonsmoothed	Hippocampus Precuneus	120.38	<.001	0.852
−	4	Hippocampus Precuneus Parahippocampus	123.10	<.001	0.871
−	8	Amygdala Hippocampus Parietal lobe	99.43	<.001	0.859
−	12	Amygdala Posterior cingulate gyrus Parietal lobe	78.71	<.001	0.828
−	16	Amygdala Parietal lobe	77.99	<.001	0.840
−	20	Amygdala Parietal lobe	71.59	<.001	0.813

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by multivariate logistic regression analyses.

On-line Table 6A: Clinical characteristics of the discovery (optimal setting determination) and validation (diagnostic performance test) groups in test 6

	Discovery Group			Validation Group		
	AD (*n* = 142)	HS (*n* = 142)	*P* Value	AD (*n* = 16)	HS (*n* = 16)	*P* Value
Age	68 ± 8	68 ± 8	.754[a]	69 ± 7	68 ± 8	.607[a]
Onset age (yr)	67 ± 8	–		68 ± 8	–	
Sex (M/F)	76:66	79:63	.721[b]	4:12	8:8	.051[b]
MMSE	21.8 ± 3.7	29.1 ± 0.7	<.001[a]	20.9 ± 2.5	29.3 ± 0.7	<.001[a]
CDR (0.5/1)	17/125	–		3/13	–	
Term of education (yr)	11.8 ± 2.6	12.4 ± 2.9	.068[c]	11.4 ± 2.6	11.5 ± 3.2	.904[c]

[a] ANOVA.
[b] χ^2 test.
[c] Kruskal-Wallis test.

On-line Table 6B: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 6 when the smoothing kernel was set to zero millimeters[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	87.39	<.001	93.32	<.001
	Posterior cingulate gyrus	9.97	.002	15.90	<.001
	Precuneus	2.59	.107		
	Hippocampus	49.11	<.001		
	Parahippocampus	29.60	<.001		
	Frontal lobe	0.70	.404		
	Occipital lobe	4.58	.032		
	Parietal lobe	5.28	.022		
	Temporal lobe	10.46	.001		
Age		0.01	.754		
Modulation −					
ROI	Amygdala	20.84	<.001		
	Posterior cingulate gyrus	17.61	<.001		
	Precuneus	7.67	.006	13.79	<.001
	Hippocampus	103.63	<.001	109.77	<.001
	Parahippocampus	33.70	<.001		
	Frontal lobe	2.30	.129		
	Occipital lobe	0.16	.692		
	Parietal lobe	4.72	.030		
	Temporal lobe	6.65	.010		
Age		0.01	.754		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 6C: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 6 when the smoothing kernel was set to 4 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	88.15	<.001	97.54	<.001
	Posterior cingulate gyrus	7.00	.008		
	Precuneus	2.43	.119		
	Hippocampus	31.72	<.001		
	Parahippocampus	30.42	<.001		
	Frontal lobe	2.87	.090		
	Occipital lobe	2.90	.089		
	Parietal lobe	10.91	.001	20.30	<.001
	Temporal lobe	19.41	<.001		
Age		0.01	.754		
Modulation −					
ROI	Amygdala	36.47	<.001		
	Posterior cingulate gyrus	6.26	.012		
	Precuneus	6.63	.010	9.87	.002
	Hippocampus	97.71	<.001	100.96	<.001
	Parahippocampus	36.41	<.001		
	Frontal lobe	6.93	.009		
	Occipital lobe	0.10	.751		
	Parietal lobe	5.48	.019		
	Temporal lobe	14.83	<.001		
Age		0.01	.754		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 6D: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 6 when the smoothing kernel was set to 8 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	85.69	<.001	101.80	<.001
	Posterior cingulate gyrus	3.87	.049		
	Precuneus	1.60	.206		
	Hippocampus	23.99	<.001		
	Parahippocampus	25.19	<.001		
	Frontal lobe	5.65	.017	11.05	.001
	Occipital lobe	3.57	.059		
	Parietal lobe	10.67	.001	23.10	<.001
	Temporal lobe	22.16	<.001		
Age		0.01	.754		
Modulation −					
ROI	Amygdala	59.38	<.001	9.07	.003
	Posterior cingulate gyrus	1.14	.286		
	Precuneus	4.57	.033		
	Hippocampus	87.46	<.001	34.04	<.001
	Parahippocampus	23.41	<.001		
	Frontal lobe	12.23	.001		
	Occipital lobe	0.05	.828		
	Parietal lobe	15.44	<.001	12.84	<.001
	Temporal lobe	28.16	<.001		
Age		0.01	.754		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 6E: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 6 when the smoothing kernel was set to 12 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	79.66	<.001	99.04	<.001
	Posterior cingulate gyrus	2.61	.106		
	Precuneus	1.78	.182		
	Hippocampus	19.95	<.001		
	Parahippocampus	18.19	<.001		
	Frontal lobe	6.27	.012	11.71	.001
	Occipital lobe	3.79	.052		
	Parietal lobe	13.04	<.001	26.83	<.001
	Temporal lobe	24.53	<.001		
Age		0.01	.754		
Modulation −					
ROI	Amygdala	72.77	<.001	23.72	<.001
	Posterior cingulate gyrus	0.02	.897	6.19	.013
	Precuneus	2.83	.093		
	Hippocampus	57.43	<.001		
	Parahippocampus	11.84	.001		
	Frontal lobe	13.86	<.001		
	Occipital lobe	<.01	.923		
	Parietal lobe	16.13	<.001	15.55	<.001
	Temporal lobe	32.19	<.001		
Age		0.01	.754		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 6F: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 6 when the smoothing kernel was set to 16 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	71.33	<.001	91.53	<.001
	Posterior cingulate gyrus	1.62	.202		
	Precuneus	1.59	.221		
	Hippocampus	17.06	<.001		
	Parahippocampus	13.28	<.001		
	Frontal lobe	6.03	.014	9.62	.002
	Occipital lobe	3.35	.067		
	Parietal lobe	14.96	<.001	28.82	<.001
	Temporal lobe	25.96	<.001		
Age		0.01	.754		
Modulation −					
ROI	Amygdala	68.99	<.001	69.19	<.001
	Posterior cingulate gyrus	0.38	.537		
	Precuneus	2.87	.090		
	Hippocampus	34.34	<.001		
	Parahippocampus	5.24	.022		
	Frontal lobe	16.29	<.001		
	Occipital lobe	0.21	.644		
	Parietal lobe	17.09	<.001	17.29	<.001
	Temporal lobe	35.53	<.001		
Age		0.01	.754		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 6G: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 6 when the smoothing kernel was set to 20 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	63.22	<.001	82.35	<.001
	Posterior cingulate gyrus	0.47	.494		
	Precuneus	1.38	.240		
	Hippocampus	17.46	<.001		
	Parahippocampus	12.60	<.001		
	Frontal lobe	4.90	.027	6.19	.013
	Occipital lobe	2.42	.120		
	Parietal lobe	14.72	<.001	29.34	<.001
	Temporal lobe	27.72	<.001		
Age		0.01	.754		
Modulation −					
ROI	Amygdala	60.58	<.001	63.03	<.001
	Posterior cingulate gyrus	0.53	.467		
	Precuneus	3.39	.065		
	Hippocampus	23.72	<.001		
	Parahippocampus	4.10	.043		
	Frontal lobe	15.99	<.001		
	Occipital lobe	0.34	.557		
	Parietal lobe	15.42	<.001	17.88	<.001
	Temporal lobe	33.33	<.001		
Age		0.01	.754		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 6H: Optimal ROI and diagnostic performance expressed as area under the curve for each image-processing setting in test 6[a]

Image-Processing Condition			Likelihood Ratio		
Modulation	Smoothing Kernel Size (mm)	ROI	χ^2 Test Statistic	*P* Value	AUC
+	Nonsmoothed	Amygdala Posterior cingulate gyrus	103.30	<.001	0.805
+	4	Amygdala Parietal lobe	108.46	<.001	0.727
+	8	Amygdala Frontal lobe Parietal lobe	118.83	<.001	0.738
+	12	Amygdala Frontal lobe Parietal lobe	118.55	<.001	0.711
+	16	Amygdala Frontal lobe Parietal lobe	111.92	<.001	0.719
+	20	Amygdala Frontal lobe Parietal lobe	101.12	<.001	0.758
−	Nonsmoothed	Hippocampus Precuneus	117.43	<.001	0.938
−	4	Hippocampus Precuneus	107.58	<.001	0.895
−	8	Amygdala Hippocampus Parietal lobe	108.41	<.001	0.863
−	12	Amygdala Posterior cingulate gyrus Parietal lobe	89.17	<.001	0.777
−	16	Amygdala Parietal lobe	86.28	<.001	0.785
−	20	Amygdala Parietal lobe	78.46	<.001	0.754

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by multivariate logistic regression analyses.

On-line Table 7A: Clinical characteristics of the discovery (optimal setting determination) and validation (diagnostic performance test) groups in test 7

	Discovery Group			Validation Group		
	AD (*n* = 142)	HS (*n* = 142)	*P* Value	AD (*n* = 16)	HS (*n* = 16)	*P* Value
Age (yr)	69 ± 8	68 ± 7	.737[a]	69 ± 9	68 ± 10	.698[a]
Onset age (yr)	67 ± 8	–		68 ± 9	–	
Sex (M/F)	69:73	80:62	.191[b]	11:5	7:9	.047[b]
MMSE	21.6 ± 3.6	29.1 ± 0.7	<.001[a]	22.8 ± 3.8	29.0 ± 0.6	<.001[a]
CDR (0.5/1)	20/122	–		0/16	–	
Term of education (yr)	11.8 ± 2.6	12.4 ± 2.9	.130[c]	10.6 ± 1.9	11.6 ± 2.4	.229[c]

[a] ANOVA.
[b] χ^2 test.
[c] Kruskal-Wallis test.

On-line Table 7B: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 7 when the smoothing kernel was set to zero millimeters[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	86.48	<.001	92.61	<.001
	Posterior cingulate gyrus	12.39	<.001	19.52	<.001
	Precuneus	4.39	.036		
	Hippocampus	56.46	<.001		
	Parahippocampus	40.95	<.001		
	Frontal lobe	0.80	.370		
	Occipital lobe	2.07	.150		
	Parietal lobe	3.79	.052		
	Temporal lobe	6.67	.001		
Age		0.11	.736		
Modulation −					
ROI	Amygdala	19.40	<.001		
	Posterior cingulate gyrus	14.32	<.001		
	Precuneus	9.02	.003	14.31	<.001
	Hippocampus	110.40	<.001	115.70	<.001
	Parahippocampus	37.98	<.001		
	Frontal lobe	1.17	.280		
	Occipital lobe	0.33	.567		
	Parietal lobe	3.34	.068		
	Temporal lobe	4.61	.032		
Age		0.11	.736		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 7C: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 7 when the smoothing kernel was set to 4 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	87.38	<.001	98.14	<.001
	Posterior cingulate gyrus	10.63	.001	7.18	.007
	Precuneus	3.78	.052		
	Hippocampus	36.35	<.001		
	Parahippocampus	43.45	<.001		
	Frontal lobe	3.38	.066		
	Occipital lobe	1.36	.244		
	Parietal lobe	7.51	.006	6.10	.013
	Temporal lobe	13.19	<.001		
Age		0.11	.736		
Modulation −					
ROI	Amygdala	32.83	<.001		
	Posterior cingulate gyrus	5.61	.018		
	Precuneus	7.31	.007	10.54	.001
	Hippocampus	99.57	<.001	66.60	<.001
	Parahippocampus	40.06	<.001	6.42	.011
	Frontal lobe	3.68	.055		
	Occipital lobe	0.04	.838		
	Parietal lobe	2.58	.108		
	Temporal lobe	11.22	<.001		
Age		0.11	.736		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 7D: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 7 when the smoothing kernel was set to 8 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	84.96	<.001	101.94	<.001
	Posterior cingulate gyrus	8.43	.004		
	Precuneus	2.49	.115		
	Hippocampus	27.01	<.001		
	Parahippocampus	36.54	<.001		
	Frontal lobe	7.13	.008	13.24	<.001
	Occipital lobe	1.66	.197		
	Parietal lobe	7.31	.007	19.99	<.001
	Temporal lobe	15.52	<.001		
Age		0.11	.736		
Modulation −					
ROI	Amygdala	53.69	<.001		
	Posterior cingulate gyrus	1.67	.196		
	Precuneus	4.93	.026	7.11	.008
	Hippocampus	87.88	<.001	88.01	<.001
	Parahippocampus	27.07	<.001		
	Frontal lobe	9.96	.002	7.06	.008
	Occipital lobe	0.22	.640		
	Parietal lobe	10.12	.002		
	Temporal lobe	17.02	<.001		
Age		0.11	.736		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 7E: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 7 when the smoothing kernel was set to 12 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	80.07	<.001	101.47	<.001
	Posterior cingulate gyrus	7.02	.008		
	Precuneus	2.66	.103		
	Hippocampus	23.59	<.001		
	Parahippocampus	27.77	<.001		
	Frontal lobe	7.84	.005	15.14	<.001
	Occipital lobe	1.68	.195		
	Parietal lobe	9.26	.002	23.61	<.001
	Temporal lobe	17.97	<.001		
Age		0.11	.736		
Modulation −					
ROI	Amygdala	68.01	<.001	19.65	<.001
	Posterior cingulate gyrus	0.02	.896		
	Precuneus	3.27	.071		
	Hippocampus	57.06	<.001	7.57	.006
	Parahippocampus	14.17	<.001		
	Frontal lobe	10.81	.001		
	Occipital lobe	0.194	.660		
	Parietal lobe	10.89	.001	11.12	.001
	Temporal lobe	18.18	<.001		
Age		0.11	.736		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 7F: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 7 when the smoothing kernel was set to 16 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	73.32	<.001	95.83	<.001
	Posterior cingulate gyrus	5.04	.025		
	Precuneus	2.42	.120		
	Hippocampus	21.87	<.001		
	Parahippocampus	21.72	<.001		
	Frontal lobe	7.84	.005	13.25	<.001
	Occipital lobe	1.40	.237		
	Parietal lobe	10.79	.001	25.10	<.001
	Temporal lobe	19.29	<.001		
Age		0.11	.736		
Modulation −					
ROI	Amygdala	64.76	<.001	66.38	<.001
	Posterior cingulate gyrus	0.33	.562		
	Precuneus	3.52	.061		
	Hippocampus	33.64	<.001		
	Parahippocampus	6.47	.011		
	Frontal lobe	12.73	<.001		
	Occipital lobe	0.73	.393		
	Parietal lobe	12.42	<.001	14.04	<.001
	Temporal lobe	20.34	<.001		
Age		0.11	.736		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 7G: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 7 when the smoothing kernel was set to 20 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	65.56	<.001	87.74	<.001
	Posterior cingulate gyrus	2.11	.146		
	Precuneus	1.38	.240		
	Hippocampus	20.42	<.001		
	Parahippocampus	16.73	<.001		
	Frontal lobe	8.02	.005	11.02	.001
	Occipital lobe	2.09	.148		
	Parietal lobe	11.47	.001	26.32	<.001
	Temporal lobe	20.79	<.001		
Age		0.11	.736		
Modulation −					
ROI	Amygdala	55.64	<.001	59.19	<.001
	Posterior cingulate gyrus	0.44	.506		
	Precuneus	4.02	.045		
	Hippocampus	22.59	<.001		
	Parahippocampus	4.30	.038		
	Frontal lobe	11.31	.001		
	Occipital lobe	0.61	.436		
	Parietal lobe	11.72	.001	15.27	<.001
	Temporal lobe	18.86	<.001		
Age		0.11	.736		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 7H: Optimal ROI and diagnostic performance expressed as area under the curve for each image-processing setting in test 7[a]

Image-Processing Condition			Likelihood Ratio		
Modulation	Smoothing Kernel Size (mm)	ROI	χ^2 Test Statistic	*P* Value	AUC
+	Nonsmoothed	Amygdala Posterior cingulate gyrus	106.00	<.001	0.758
+	4	Amygdala Posterior cingulate gyrus Parietal lobe	110.83	<.001	0.793
+	8	Amygdala Frontal lobe Parietal lobe	117.06	<.001	0.805
+	12	Amygdala Frontal lobe Parietal lobe	118.83	<.001	0.801
+	16	Amygdala Frontal lobe Parietal lobe	113.39	<.001	0.816
+	20	Amygdala Frontal lobe Parietal lobe	106.08	<.001	0.816
−	Nonsmoothed	Hippocampus Precuneus	124.73	<.001	0.836
−	4	Hippocampus Precuneus Parahippocampus	115.60	<.001	0.852
−	8	Hippocampus Precuneus Frontal lobe	102.13	<.001	0.809
−	12	Amygdala Hippocampus Parietal lobe	86.80	<.001	0.828
−	16	Amygdala Parietal lobe	78.80	<.001	0.811
−	20	Amygdala Parietal lobe	70.91	<.001	0.824

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by multivariate logistic regression analyses.

On-line Table 8A: Clinical characteristics of the discovery (optimal setting determination) and validation (diagnostic performance test) groups in test 8

	Discovery Group			Validation Group		
	AD (*n* = 142)	HS (*n* = 142)	*P* Value	AD (*n* = 16)	HS (*n* = 16)	*P* Value
Age (yr)	69 ± 8	68 ± 8	.669[a]	69 ± 8	68 ± 6	.865[a]
Onset age (yr)	67 ± 8	–		68 ± 9	–	
Sex (M/F)	71:71	81:61	.234[b]	9:7	6:10	.286[b]
MMSE	21.7 ± 3.4	29.1 ± 0.7	<.001[a]	21.8 ± 4.8	29.3 ± 0.7	<.001[a]
CDR (0.5/1)	19/123	–		1/15	–	
Term of education (yr)	11.7 ± 2.6	12.2 ± 2.9	.100[c]	12.2 ± 2.6	12.8 ± 2.9	.529[c]

[a] ANOVA.
[b] χ^2 test.
[c] Kruskal-Wallis test.

On-line Table 8B: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 8 when the smoothing kernel was set to zero millimeters[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	79.58	<.001	88.66	<.001
	Posterior cingulate gyrus	13.15	<.001	22.22	<.001
	Precuneus	2.59	.107		
	Hippocampus	52.91	<.001		
	Parahippocampus	32.98	<.001		
	Frontal lobe	<.01	.922		
	Occipital lobe	3.81	.051		
	Parietal lobe	2.54	.111		
	Temporal lobe	8.31	.004		
Age		0.18	.667		
Modulation −					
ROI	Amygdala	17.36	<.001		
	Posterior cingulate gyrus	19.05	<.001		
	Precuneus	5.46	.019	9.98	.002
	Hippocampus	110.00	<.001	114.48	<.001
	Parahippocampus	37.47	<.001		
	Frontal lobe	0.21	.648		
	Occipital lobe	0.07	.792		
	Parietal lobe	1.75	.186		
	Temporal lobe	4.34	.037		
Age		0.18	.667		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 8C: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 8 when the smoothing kernel was set to 4 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	81.95	<.001	94.93	<.001
	Posterior cingulate gyrus	9.64	.002	6.16	.013
	Precuneus	2.24	.135		
	Hippocampus	33.37	<.001		
	Parahippocampus	32.80	<.001		
	Frontal lobe	1.21	.272		
	Occipital lobe	6.67	.001		
	Parietal lobe	7.51	.006	7.26	.007
	Temporal lobe	17.46	<.001		
Age		0.18	.667		
Modulation −					
ROI	Amygdala	31.89	<.001		
	Posterior cingulate gyrus	7.91	.005		
	Precuneus	4.29	.038	7.23	.007
	Hippocampus	101.89	<.001	72.36	<.001
	Parahippocampus	39.79	<.001	8.78	.003
	Frontal lobe	1.63	.202		
	Occipital lobe	0.18	.672		
	Parietal lobe	1.85	.174		
	Temporal lobe	11.00	.001		
Age		0.18	.667		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 8D: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 8 when the smoothing kernel was set to 8 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	81.09	<.001	94.62	<.001
	Posterior cingulate gyrus	7.29	.007		
	Precuneus	2.49	.115		
	Hippocampus	24.91	<.001		
	Parahippocampus	26.86	<.001		
	Frontal lobe	3.80	.051		
	Occipital lobe	2.51	.113		
	Parietal lobe	7.70	.006	21.22	<.001
	Temporal lobe	20.58	<.001		
Age		0.18	.667		
Modulation −					
ROI	Amygdala	58.09	<.001	8.06	.005
	Posterior cingulate gyrus	1.52	.217		
	Precuneus	2.65	.104		
	Hippocampus	101.89	<.001	38.52	<.001
	Parahippocampus	25.86	<.001		
	Frontal lobe	6.28	.012		
	Occipital lobe	0.06	.812		
	Parietal lobe	9.94	.002	7.44	.006
	Temporal lobe	21.72	<.001		
Age		0.18	.667		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 8E: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 8 when the smoothing kernel was set to 12 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	75.82	<.001	95.37	<.001
	Posterior cingulate gyrus	5.72	.017		
	Precuneus	1.95	.163		
	Hippocampus	21.72	<.001		
	Parahippocampus	20.19	<.001		
	Frontal lobe	4.61	.032	7.93	.005
	Occipital lobe	2.59	.108		
	Parietal lobe	10.99	.001	26.33	<.001
	Temporal lobe	22.60	<.001		
Age		0.18	.667		
Modulation −					
ROI	Amygdala	73.27	<.001	21.46	<.001
	Posterior cingulate gyrus	<.01	.992		
	Precuneus	1.55	.212		
	Hippocampus	60.14	<.001	6.94	.008
	Parahippocampus	14.91	<.001		
	Frontal lobe	8.34	.004		
	Occipital lobe	0.04	.848		
	Parietal lobe	11.40	.001	8.84	.003
	Temporal lobe	24.34	<.001		
Age		0.18	.667		

[a] Likelihood ratio χ^2test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 8F: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 8 when the smoothing kernel was set to 16 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	69.50	<.001	90.04	<.001
	Posterior cingulate gyrus	4.12	.043		
	Precuneus	1.84	.175		
	Hippocampus	19.87	<.001		
	Parahippocampus	15.24	<.001		
	Frontal lobe	4.52	.034	6.76	<.009
	Occipital lobe	2.07	.150		
	Parietal lobe	13.40	<.001	28.45	<.001
	Temporal lobe	23.15	<.001		
Age		0.18	.667		
Modulation −					
ROI	Amygdala	70.94	<.001	69.17	<.001
	Posterior cingulate gyrus	0.17	.680		
	Precuneus	2.07	.150		
	Hippocampus	38.59	<.001		
	Parahippocampus	8.10	.004		
	Frontal lobe	11.70	.001		
	Occipital lobe	0.43	.513		
	Parietal lobe	13.62	<.001	11.85	.001
	Temporal lobe	28.05	<.001		
Age		0.18	.667		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 8G: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 8 when the smoothing kernel was set to 20 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	60.49	<.001	79.18	<.001
	Posterior cingulate gyrus	1.85	.174		
	Precuneus	1.83	.177		
	Hippocampus	18.59	<.001		
	Parahippocampus	12.33	<.001		
	Frontal lobe	5.42	.020		
	Occipital lobe	1.61	.204		
	Parietal lobe	13.84	<.001	32.52	<.001
	Temporal lobe	24.62	<.001		
Age		0.18	.667		
Modulation −					
ROI	Amygdala	63.35	<.001	62.89	<.001
	Posterior cingulate gyrus	0.50	.478		
	Precuneus	2.34	.126		
	Hippocampus	28.32	<.001		
	Parahippocampus	6.13	.013		
	Frontal lobe	10.63	.001		
	Occipital lobe	0.27	.603		
	Parietal lobe	13.08	<.001	12.62	<.001
	Temporal lobe	26.62	<.001		
Age		0.18	.667		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 8H: Optimal ROI and diagnostic performance expressed as area under the curve for each image-processing setting in test 8[a]

Image-Processing Condition			Likelihood Ratio		
Modulation	Smoothing Kernel Size (mm)	ROI	χ^2 Test Statistic	*P* Value	AUC
+	Nonsmoothed	Amygdala Posterior cingulate gyrus	101.81	<.001	0.832
+	4	Amygdala Posterior cingulate gyrus Parietal lobe	106.28	<.001	0.808
+	8	Amygdala Parietal lobe	102.31	<.001	0.785
+	12	Amygdala Frontal lobe Parietal lobe	110.83	<.001	0.863
+	16	Amygdala Frontal lobe Parietal lobe	107.12	<.001	0.844
+	20	Amygdala Parietal lobe	93.01	<.001	0.785
−	Nonsmoothed	Hippocampus Precuneus	119.94	<.001	0.871
−	4	Hippocampus Precuneus Parahippocampus	117.28	<.001	0.852
−	8	Amygdala Hippocampus Parietal lobe	105.42	<.001	0.824
−	12	Amygdala Hippocampus Parietal lobe	89.68	<.001	0.797
−	16	Amygdala Parietal lobe	82.79	<.001	0.785
−	20	Amygdala Parietal lobe	75.97	<.001	0.770

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by multivariate logistic regression analyses.

On-line Table 9A: Clinical characteristics of the discovery (optimal setting determination) and validation (diagnostic performance test) groups in test 9

	Discovery Group			Validation Group		
	AD (*n* = 143)	HS (*n* = 143)	*P* Value	AD (*n* = 15)	HS (*n* = 15)	*P* Value
Age (yr)	69 ± 8	68 ± 8	.771[a]	70 ± 8	68 ± 9	.573[a]
Onset age (yr)	67 ± 8	–		68 ± 9	–	
Sex (M/F)	73:70	77:66	.636[b]	7:8	10:5	.267[b]
MMSE	21.9 ± 3.5	29.1 ± 0.7	<.001[a]	20.4 ± 3.9	29.1 ± 0.8	<.001[a]
CDR (0.5/1)	17/126	–		3/12	–	
Term of education (yr)	11.7 ± 2.6	12.3 ± 2.9	.078[c]	12.1 ± 2.5	12.3 ± 2.9	.790[c]

[a] ANOVA.
[b] χ^2 test.
[c] Kruskal-Wallis test.

On-line Table 9B: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 9 when the smoothing kernel was set to zero millimeters[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	78.44	<.001	84.48	<.001
	Posterior cingulate gyrus	12.95	<.001	18.98	<.001
	Precuneus	4.90	.027		
	Hippocampus	50.18	<.001		
	Parahippocampus	27.05	<.001		
	Frontal lobe	0.44	.505		
	Occipital lobe	2.12	.145		
	Parietal lobe	5.71	.017		
	Temporal lobe	7.36	.007		
Age		0.09	.770		
Modulation −					
ROI	Amygdala	15.70	<.001		
	Posterior cingulate gyrus	18.11	<.001		
	Precuneus	11.23	.001	15.79	<.001
	Hippocampus	110.46	<.001	115.03	<.001
	Parahippocampus	31.85	<.001		
	Frontal lobe	1.02	.314		
	Occipital lobe	0.65	.422		
	Parietal lobe	5.09	.024		
	Temporal lobe	4.07	.044		
Age		0.09	.770		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 9C: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 9 when the smoothing kernel was set to 4 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	80.13	<.001	85.71	<.001
	Posterior cingulate gyrus	9.03	.003		
	Precuneus	4.11	.043		
	Hippocampus	31.94	<.001		
	Parahippocampus	28.28	<.001		
	Frontal lobe	2.99	.084		
	Occipital lobe	1.11	.292		
	Parietal lobe	10.93	.001	16.51	<.001
	Temporal lobe	15.95	<.001		
Age		0.09	.770		
Modulation −					
ROI	Amygdala	28.43	<.001		
	Posterior cingulate gyrus	6.33	.012		
	Precuneus	10.16	.001	11.40	.001
	Hippocampus	100.85	<.001	102.10	<.001
	Parahippocampus	31.99	<.001		
	Frontal lobe	3.82	.051		
	Occipital lobe	0.03	.872		
	Parietal lobe	5.40	.020		
	Temporal lobe	10.36	.001		
Age		0.09	.770		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 9D: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 9 when the smoothing kernel was set to 8 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	79.42	<.001	90.97	<.001
	Posterior cingulate gyrus	7.08	.008		
	Precuneus	2.62	.106		
	Hippocampus	23.93	<.001		
	Parahippocampus	25.78	<.001		
	Frontal lobe	6.04	.014	10.53	.001
	Occipital lobe	1.27	.259		
	Parietal lobe	10.64	.001	20.56	<.001
	Temporal lobe	18.20	<.001		
Age		0.09	.770		
Modulation −					
ROI	Amygdala	49.47	<.001		
	Posterior cingulate gyrus	1.30	.254		
	Precuneus	6.82	.009		
	Hippocampus	88.06	<.001	83.54	<.001
	Parahippocampus	21.67	<.001		
	Frontal lobe	9.06	.003		
	Occipital lobe	0.55	.457		
	Parietal lobe	15.44	<.001	10.92	.001
	Temporal lobe	18.48	<.001		
Age		0.09	.770		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 9E: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 9 when the smoothing kernel was set to 12 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	76.39	<.001	91.07	<.001
	Posterior cingulate gyrus	5.82	.016		
	Precuneus	2.78	.096		
	Hippocampus	20.51	<.001		
	Parahippocampus	19.71	<.001		
	Frontal lobe	6.84	.009	11.70	.001
	Occipital lobe	1.46	.227		
	Parietal lobe	13.56	<.001	24.37	<.001
	Temporal lobe	20.70	<.001		
Age		0.09	.770		
Modulation −					
ROI	Amygdala	66.18	<.001	18.19	<.001
	Posterior cingulate gyrus	<.01	.978		
	Precuneus	4.71	.030		
	Hippocampus	58.24	<.001	10.03	.002
	Parahippocampus	12.25	.001		
	Frontal lobe	10.69	.001		
	Occipital lobe	0.54	.461		
	Parietal lobe	15.44	<.001	13.07	<.001
	Temporal lobe	21.10	<.001		
Age		0.09	.770		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 9F: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 9 when the smoothing kernel was set to 16 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	71.11	<.001	86.87	<.001
	Posterior cingulate gyrus	4.38	.036		
	Precuneus	2.63	.105		
	Hippocampus	18.83	<.001		
	Parahippocampus	15.65	<.001		
	Frontal lobe	6.08	.014	9.66	.002
	Occipital lobe	1.55	.213		
	Parietal lobe	15.81	<.001	26.29	<.001
	Temporal lobe	22.18	<.001		
Age		0.09	.770		
Modulation −					
ROI	Amygdala	65.97	<.001	65.66	<.001
	Posterior cingulate gyrus	0.42	.516		
	Precuneus	4.36	.037		
	Hippocampus	34.43	<.001		
	Parahippocampus	5.56	.018		
	Frontal lobe	12.76	<.001		
	Occipital lobe	1.18	.277		
	Parietal lobe	15.52	<.001	15.21	<.001
	Temporal lobe	22.84	<.001		
Age		0.09	.770		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 9G: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 9 when the smoothing kernel was set to 20 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	64.97	<.001	80.64	<.001
	Posterior cingulate gyrus	1.99	.159		
	Precuneus	2.21	.137		
	Hippocampus	18.94	<.001		
	Parahippocampus	13.15	<.001		
	Frontal lobe	6.11	.014	7.47	.006
	Occipital lobe	1.14	.286		
	Parietal lobe	16.08	<.001	27.15	<.001
	Temporal lobe	25.19	<.001		
Age		0.09	.770		
Modulation −					
ROI	Amygdala	58.23	<.001	60.16	<.001
	Posterior cingulate gyrus	0.48	.490		
	Precuneus	4.75	.029		
	Hippocampus	23.87	<.001		
	Parahippocampus	3.95	.047		
	Frontal lobe	11.71	.001		
	Occipital lobe	1.06	.304		
	Parietal lobe	14.81	<.001	16.74	<.001
	Temporal lobe	20.91	<.001		
Age		0.09	.770		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 9H: Optimal ROI and diagnostic performance expressed as area under the curve for each image-processing setting in test 9[a]

Image-Processing Condition			Likelihood Ratio		
Modulation	Smoothing Kernel Size (mm)	ROI	χ^2 Test Statistic	*P* Value	AUC
+	Nonsmoothed	Amygdala Posterior cingulate gyrus	92.42	<.001	0.858
+	4	Amygdala Parietal lobe	96.64	<.001	0.876
+	8	Amygdala Frontal lobe Parietal lobe	109.00	<.001	0.853
+	12	Amygdala Frontal lobe Parietal lobe	112.28	<.001	0.813
+	16	Amygdala Frontal lobe Parietal lobe	108.62	<.001	0.800
+	20	Amygdala Frontal lobe Parietal lobe	102.15	<.001	0.756
−	Nonsmoothed	Hippocampus Precuneus	126.26	<.001	0.851
−	4	Hippocampus Precuneus	112.25	<.001	0.849
−	8	Hippocampus Parietal lobe	98.98	<.001	0.833
−	12	Amygdala Hippocampus Parietal lobe	89.53	<.001	0.840
−	16	Amygdala Parietal lobe	81.19	<.001	0.800
−	20	Amygdala Parietal lobe	74.97	<.001	0.756

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by multivariate logistic regression analyses.

On-line Table 10A: Clinical characteristics of the discovery (optimal setting determination) and validation (diagnostic performance test) groups in test 10

	Discovery Group			Validation Group		
	AD (*n* = 143)	HS (*n* = 143)	*P* Value	AD (*n* = 15)	HS (*n* = 15)	*P* Value
Age (yr)	69 ± 8	68 ± 7	.578[a]	69 ± 8	69 ± 7	.820[a]
Onset age (yr)	67 ± 8	–		66 ± 8	–	
Sex (M/F)	70:73	77:66	.408[b]	10:5	10:5	1.000[b]
MMSE	21.6 ± 3.6	29.1 ± 0.7	<.001[a]	23.2 ± 2.9	28.9 ± 0.6	<.001[a]
CDR (0.5/1)	20/123	–		0/15	–	
Term of education (yr)	11.7 ± 2.6	12.3 ± 2.9	.076[c]	12.1 ± 2.6	12.3 ± 2.5	.833[c]

[a] ANOVA.
[b] χ^2 test.
[c] Kruskal-Wallis test.

On-line Table 10B: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 10 when the smoothing kernel was set to zero millimeters[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	85.29	<.001	92.63	<.001
	Posterior cingulate gyrus	9.68	.002	17.03	<.001
	Precuneus	2.08	.149		
	Hippocampus	58.93	<.001		
	Parahippocampus	31.42	<.001		
	Frontal lobe	0.42	.519		
	Occipital lobe	2.97	.085		
	Parietal lobe	4.28	.039		
	Temporal lobe	8.86	.003		
Age		0.31	.576		
Modulation −					
ROI	Amygdala	21.13	<.001		
	Posterior cingulate gyrus	12.82	<.001		
	Precuneus	7.64	.006	11.94	.001
	Hippocampus	115.51	<.001	119.81	<.001
	Parahippocampus	37.50	<.001		
	Frontal lobe	0.42	.519		
	Occipital lobe	0.29	.592		
	Parietal lobe	4.27	.039		
	Temporal lobe	6.51	.011		
Age		0.31	.576		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 10C: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 10 when the smoothing kernel was set to 4 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	85.18	<.001	94.40	<.001
	Posterior cingulate gyrus	7.23	.007		
	Precuneus	1.83	.176		
	Hippocampus	38.70	<.001		
	Parahippocampus	30.61	<.001		
	Frontal lobe	2.80	.094		
	Occipital lobe	1.65	.199		
	Parietal lobe	8.69	.003	17.91	<.001
	Temporal lobe	15.31	<.001		
Age		0.31	.576		
Modulation −					
ROI	Amygdala	35.75	<.001		
	Posterior cingulate gyrus	3.69	.055		
	Precuneus	6.77	.009	8.30	.004
	Hippocampus	103.43	<.001	104.95	<.001
	Parahippocampus	36.26	<.001		
	Frontal lobe	2.66	.103		
	Occipital lobe	0.04	.839		
	Parietal lobe	8.51	.004		
	Temporal lobe	12.52	<.001		
Age		0.31	.576		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 10D: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 10 when the smoothing kernel was set to 8 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	82.81	<.001	97.25	<.001
	Posterior cingulate gyrus	4.54	.033		
	Precuneus	0.90	.343		
	Hippocampus	28.45	<.001		
	Parahippocampus	24.93	<.001		
	Frontal lobe	5.51	.019	9.34	.002
	Occipital lobe	2.06	.151		
	Parietal lobe	8.49	.004	20.45	<.001
	Temporal lobe	17.44	<.001		
Age		0.31	.576		
Modulation −					
ROI	Amygdala	55.86	<.001	7.37	.007
	Posterior cingulate gyrus	0.74	.390		
	Precuneus	5.08	.024		
	Hippocampus	88.22	<.001	37.24	<.001
	Parahippocampus	20.55	<.001		
	Frontal lobe	7.60	.006		
	Occipital lobe	0.11	.743		
	Parietal lobe	13.31	<.001	10.86	.001
	Temporal lobe	23.38	<.001		
Age		0.31	.576		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 10E: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 10 when the smoothing kernel was set to 12 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	77.31	<.001	95.33	<.001
	Posterior cingulate gyrus	2.86	.091		
	Precuneus	0.99	.320		
	Hippocampus	23.35	<.001		
	Parahippocampus	17.80	<.001		
	Frontal lobe	6.00	.014	10.42	.001
	Occipital lobe	2.24	.135		
	Parietal lobe	10.49	.001	23.77	<.001
	Temporal lobe	20.09	<.001		
Age		0.31	.576		
Modulation −					
ROI	Amygdala	68.49	<.001	21.19	<.001
	Posterior cingulate gyrus	0.38	.538		
	Precuneus	2.96	.085		
	Hippocampus	88.22	<.001	6.49	.011
	Parahippocampus	20.55	<.001		
	Frontal lobe	7.60	.006		
	Occipital lobe	0.11	.743		
	Parietal lobe	13.59	<.001	12.28	.001
	Temporal lobe	25.07	<.001		
Age		0.31	.576		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 10F: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 10 when the smoothing kernel was set to 16 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	69.92	<.001	88.86	<.001
	Posterior cingulate gyrus	1.62	.201		
	Precuneus	0.87	.352		
	Hippocampus	20.18	<.001		
	Parahippocampus	13.20	<.001		
	Frontal lobe	5.62	.018	8.90	.003
	Occipital lobe	2.04	.153		
	Parietal lobe	12.20	.001	25.30	<.001
	Temporal lobe	21.17	<.001		
Age		0.31	.576		
Modulation −					
ROI	Amygdala	63.50	<.001	63.29	<.001
	Posterior cingulate gyrus	1.56	.211		
	Precuneus	2.25	.134		
	Hippocampus	29.97	<.001		
	Parahippocampus	3.17	.075		
	Frontal lobe	10.66	.001		
	Occipital lobe	0.05	.819		
	Parietal lobe	13.82	<.001	13.61	<.001
	Temporal lobe	25.03	<.001		
Age		0.31	.576		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression analyses.

On-line Table 10G: Results of univariate and multivariate analyses for the discrimination of AD from HS in test 10 when the smoothing kernel was set to 20 mm[a]

		Univariate Analysis		Multivariate Analysis	
		Likelihood Ratio χ^2 Test Statistic	*P* Value	Likelihood Ratio χ^2 Test Statistic	*P* Value
Modulation +					
ROI	Amygdala	62.17	<.001	68.78	<.001
	Posterior cingulate gyrus	0.20	.656		
	Precuneus	0.62	.433		
	Hippocampus	19.21	<.001		
	Parahippocampus	11.01	.001	8.60	.003
	Frontal lobe	5.87	.015		
	Occipital lobe	1.92	.166		
	Parietal lobe	11.85	.001	24.02	<.001
	Temporal lobe	22.37	<.001		
Age		0.31	.576		
Modulation −					
ROI	Amygdala	53.38	<.001	54.67	<.001
	Posterior cingulate gyrus	1.52	.217		
	Precuneus	2.42	.119		
	Hippocampus	19.32	<.001		
	Parahippocampus	1.75	.186		
	Frontal lobe	10.09	.002		
	Occipital lobe	<.01	.966		
	Parietal lobe	13.43	<.001	14.71	<.001
	Temporal lobe	22.53	<.001		
Age		0.31	.576		

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by univariate and multivariate logistic regression.

On-line Table 10H: Optimal ROI and diagnostic performance expressed as area under the curve for each image-processing setting in test 10[a]

Image-Processing Condition			Likelihood Ratio		
Modulation	Smoothing Kernel Size (mm)	ROI	χ^2 Test Statistic	*P* Value	AUC
+	Nonsmoothed	Amygdala Posterior cingulate gyrus	102.32	<.001	0.778
+	4	Amygdala Parietal lobe	103.09	<.001	0.742
+	8	Amygdala Frontal lobe Parietal lobe	111.84	<.001	0.787
+	12	Amygdala Frontal lobe Parietal lobe	111.93	<.001	0.827
+	16	Amygdala Frontal lobe Parietal lobe	106.08	<.001	0.831
+	20	Amygdala Parahippocampus Parietal lobe	98.60	<.001	0.818
−	Nonsmoothed	Hippocampus Precuneus	127.45	<.001	0.787
−	4	Hippocampus Precuneus	111.73	<.001	0.804
−	8	Amygdala Hippocampus Parietal lobe	105.83	<.001	0.827
−	12	Amygdala Hippocampus Parietal lobe	87.72	<.001	0.831
−	16	Amygdala Parietal lobe	77.11	<.001	0.840
−	20	Amygdala Parietal lobe	68.10	<.001	0.893

[a] Likelihood ratio χ^2 test statistic and *P* values were determined by multivariate logistic regression analyses.