

# EI: Early Intervention for Multimodal Imaging based Disease Recognition

## Supplementary Material

In addition to the mAP-based evaluation presented in Tab. 3, we further compare EI with existing multimodal approaches by reporting per-dataset mAUC and mS2 scores in Tab. S1. The results align with our earlier findings, as EI achieves consistent and superior performance over the strongest baseline, MMRAD. This provides additional evidence for the effectiveness of EI. Moreover, the superiority of EI over the enhanced baselines underscores the advantage of our early intervention strategy.

Table S1. Comparison of multimodal methods across three datasets. The per-dataset mAP, mAUC and mS2 are reported. Baselines are sorted in ascending order by their overall mAP.

Method	Params. (M)	Overall			AMD			DERM			MRNet		
		mAP	mAUC	mS2	mAP	mAUC	mS2	mAP	mAUC	mS2	mAP	mAUC	mS2
<b>VFM: CLIP</b>													
RadDiag	212.2	0.648	0.817	0.577	0.783	0.913	0.771	0.352	0.726	0.427	0.809	0.812	0.533
DynMM	402.2	0.671	0.821	0.623	0.830	0.931	0.826	0.349	0.709	0.462	0.833	0.824	0.581
MM-MIL	202.5	0.671	0.834	0.650	0.818	0.930	0.811	0.360	0.727	0.468	0.835	0.845	0.672
CosCat	201.0	0.679	0.839	0.649	0.839	0.939	<b>0.837</b>	0.364	0.736	0.476	0.835	0.842	0.635
SFusion	263.4	0.683	0.840	0.633	0.840	0.942	<b>0.837</b>	0.375	0.736	0.449	0.835	0.843	0.612
MMRAD	9.3	0.729	0.868	0.637	0.819	0.928	0.788	0.549	0.852	0.662	0.818	0.824	0.462
EI	8.9	<b>0.822</b>	<b>0.919</b>	<b>0.766</b>	<b>0.889</b>	<b>0.958</b>	0.830	<b>0.715</b>	<b>0.919</b>	<b>0.742</b>	<b>0.861</b>	<b>0.869</b>	<b>0.725</b>
MM-MIL-MoR	5.0	0.793	0.909	0.689	0.879	0.955	0.770	0.651	0.911	0.607	0.850	0.862	0.689
MMRAD-MoR	12.5	0.783	0.899	0.678	0.865	0.938	0.746	0.651	0.904	0.590	0.833	0.856	0.698
UniModel	1.5	0.740	0.874	0.656	0.868	0.940	0.803	0.548	0.859	0.549	0.803	0.822	0.617
<b>VFM: DINOv2</b>													
SFusion	265.8	0.687	0.843	0.678	0.821	0.937	0.861	0.401	0.739	0.589	0.839	0.853	0.583
DynMM	404.3	0.688	0.835	0.668	0.854	0.938	0.820	0.377	0.725	0.498	0.833	0.843	0.686
CosCat	202.0	0.693	0.847	0.693	0.823	0.932	0.854	0.417	0.758	0.535	0.841	0.850	0.691
RadDiag	213.3	0.717	0.861	0.714	0.826	0.931	0.834	0.499	0.817	0.616	0.825	0.835	0.691
MM-MIL	203.6	0.733	0.875	0.719	0.863	0.939	0.839	0.502	0.833	0.614	0.835	0.853	0.705
MMRAD	9.3	0.735	0.876	0.714	0.821	0.923	0.814	0.566	0.863	0.680	0.818	0.842	0.649
EI	8.9	<b>0.841</b>	<b>0.917</b>	<b>0.794</b>	<b>0.909</b>	<b>0.959</b>	<b>0.887</b>	<b>0.767</b>	<b>0.932</b>	<b>0.790</b>	<b>0.848</b>	<b>0.860</b>	0.704
MM-MIL-MoR	5.0	0.823	0.908	0.753	0.906	0.954	0.864	0.724	0.920	0.656	0.837	0.850	0.738
MMRAD-MoR	12.5	0.806	0.903	0.723	0.901	0.954	0.790	0.687	0.906	0.613	0.829	0.848	<b>0.765</b>
UniModel	1.5	0.770	0.886	0.744	0.883	0.944	0.848	0.615	0.883	0.725	0.812	0.831	0.658