

Supplementary Table 1. Summary of included datasets

Model	Datasets	Original Images (n=114715)	After Preprocessing (n=34924)	Categories	Diseases
CFP	ODIR	6392	5684	7	Normal, Diabetes, Glaucoma, Cataract, Age-related Macular Degeneration, Hypertension, Pathological Myopia.
	MuReD	2208	2060	19	Diabetic Retinopathy, Normal, Media Haze, Optic Disc Cupping, Tesselation, Age-Related Macular Degeneration, Drusen, Myopia, Branch Retinal Vein Occlusion, Optic Disc Pallor, Central Retinal Vein Occlusion, Choroidal Neovascularization, Retinitis, Optic Disc Edema, Laser Scars, Central Serous Retinopathy, Hypertensive Retinopathy, Arteriosclerotic Retinopathy, Chorioretinitis.
	Eye Diseases Classification	4217	4217	4	Cataract, Diabetic Retinopathy, Glaucoma, Normal.
OCT	OCT2017	83484	5620	4	Choroidal Neovascularization, Diabetic Macular Edema, Drusen, Normal.
	OCTID	572	572	5	Age-related Macular Degeneration, Central Serous Retinopathy, Diabetic Retinopathy, Macular Hole, Normal.
	OCTDL	2064	2064	7	Age-Related Macular Degeneration, Diabetic Macular Edema, Epiretinal Membrane, Normal, Retinal Artery Occlusion, Retinal Vein Occlusion, Vitreomacular Interface Disease.
UWF	UWF Fundus Images of Intraocular Tumors	2031	2031	6	Normal, Choroidal Hemangioma, Choroidal Osteoma, Retinal Capillary Hemangioma, Retinoblastoma, Uveal Melanoma
	OpenUWF	700	700	7	Age-related Macular Degeneration, Pathological Myopia, Diabetic Retinopathy, Retinal Vein Occlusion, Normal, Uveitis, Retinal Detachment.
	Tsukazaki Hospital	13047	11976	8	Age-related Macular Degeneration, Macular Hole, Diabetic Retinopathy, Retinal Vein Occlusion, Normal, Glaucoma, Retinal Detachment, Retinitis Pigmentosa.

Note: During the preprocessing stage, specific categories were excluded to ensure dataset consistency. Images labeled as "other" were removed from the ODIR dataset (N = 708) and the MuReD dataset (N = 148). In the Tsukazaki Hospital dataset, images labeled as "AO" and "DM" were excluded (N = 1071). For the OCT2017 dataset, only the horizontal fovea cross-section per patient was retained, while the remaining images were removed to prevent duplication (N = 77864). Abbreviations: CFP, color fundus photography; OCT, optical coherence tomography; UWF, ultra-widefield fundus imaging.