Supplementary Appendix S2

Additional Methods

Search strategy used in Medline and EMBASE database

(1) "Diagnostic techniques, ophthalmological/ or electroretinography/ or eye movement measurements/ or electronystagmography/ or electrooculography/", (2) "Tomography, Optical Coherence/", (3) "Optical coherence tomography.ti,ab.", (4) "(eye-track* or eye track*).mp.", (5) "Retina* exam*.ti,ab.", (6) "Ophthalmic assessment*.ti,ab.", (7) "1 or 2 or 3 or 4 or 5 or 6", (8) "Exp Retina/", (9) "Retina*.ti,ab.", (10) "8 or 9", (11) "7 and 10", (12) "Exp Dementia/", (13) "(dementia or cognitive impairment*).ti,ab.", (14) "12 or 13", and (15) "11 and 14"

Search strategy used in PsycINFO

☐	1	Diagnostic techniques, ophthalmological/ or electroretinography/ or eye movement measurements/ or electronystagmography/ or electrooculography.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh word]	2580	Advanced
☐	2	Tomography/	5330	Advanced
☐	3	Optical coherence tomography.ti,ab.	536	Advanced
☐	4	(eye-track* or eye track*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh word]	7728	Advanced
☐	5	Retina* exam*.ti,ab.	44	Advanced
☐	6	Ophthalmic assessment*.ti,ab.	12	Advanced
☐	7	1 or 2 or 3 or 4 or 5 or 6	15890	Advanced
☐	8	exp Retina/	8932	Advanced
☐	9	Retina*.ti,ab.	18697	Advanced
☐	10	8 or 9	20257	Advanced
☐	11	7 and 10	939	Advanced
☐	12	exp Dementia/	85053	Advanced
☐	13	(dementia or cognitive impairment*).ti,ab.	96290	Advanced
☐	14	12 or 13	124970	Advanced
☐	15	11 and 14	70	Advanced

Supplementary Table 1. Definitions of terminology used in the included studies

Terminology	Number of Articles that Utilised these Terms	Definition	Reference(s)
Optical Coherence Tomography (OCT)	41	Non-invasive technique to acquire high resolution, cross-sectional images of the retina	Almeida 2019
SD-OCT	18	Uses a light source with a longer-wavelength to promote deeper tissue penetration. It detects light echoes through an interferometer with a spectrometer.	Adhi 2013
SS-OCT	1	Measures light echoes using photodetectors, thus improving the signal quality in deep tissue to enhance choroid visualisation.	Adhi 2013
Fluorescence Lifetime Imaging Ophthalmoscopy (FLIO)	1	Measures the autofluorescence intensity emitted by endogenous fluorophores contained within the retina to determine retinal metabolic activity.	Dysli 2017; Jentsch 2014
Laser Doppler Retinal Blood Flow	1	Measures the retinal blood flow rate, centreline blood speed and blood column diameter in a major temporal retinal vein. As the vein with the largest diameter drains the largest portion of the total retinal blood flow, the blood flow measured within this retinal vein will be representative of total retinal blood flow.	Feke 2015
Alzheimer's dementia (AD)	37	Most common form of dementia characterised by progressive deterioration in cognition, executive functioning, learning and episodic memory	Gao 2015
Mild cognitive impairment (MCI)	19	Preclinical phase of AD characterised by cognitive decline that is significant for their age but does not compromise functioning or activities of daily living	Gao 2015; Almeida 2019
Choroid	4	Vascular layer located between the sclera and retina of the eye which supplies oxygen and nutrients to the outer third of the retina, retinal pigment epithelium and part of the optic nerve.	Tan 2017
Retinal pigment epithelium (RPE)	1	Single layer of pigmented, cuboidal cells which regulates the transport of nutrients, ions, and water, absorbs scattered light and partakes in phagocytosis of shed photoreceptors.	Sparrow 2010
Outer nuclear layer of the retina (ONL)	1	Contains cell bodies of photoreceptors, the rods and cones	Balasubramaniam 2014
Outer plexiform layer (OPL)	2	Synapse between the cells located in the INL (bipolar and horizontal cells) and ONL (rods and cones) occurs in the OPL.	Kolb 1995
Inner nuclear layer of the retina (INL)	2	Composed of the cell bodies of bipolar, horizontal, interplexiform, amacrine and	Balasubramaniam 2014

		Müller cells, and occasionally displaced ganglion cells	
Ganglion cell inner plexiform layer (GC-IPL)	10	Comprised of the dendrites and cell bodies of retinal ganglion cells	Öztürker 2016
Ganglion cell complex (GCC)	11	Composed of the retinal nerve fibre layer (RNFL), ganglion cell layer (GCL) and inner plexiform layer (IPL)	Öztürker 2016
Retinal nerve fibre layer (RNFL)	25	Comprised of nonmyelinated retinal ganglion cell axons that form the optic nerve	Shi 2019
Macula	17	Central, oval-shaped region of the retina comprising of a highest density of cone photoreceptions which is responsible for visual acuity	Lima 2016
Foveal Avascular Zone (FAZ)	6	Central region of the fovea, characterised by an absence of blood vessels, rods, inner retinal tissue and peak cone density. The fovea is the central area of the macula.	Chui 2012

Supplementary Table 2. Summary of studies and machine used.

Year	Author	Method	OCT Machine
2001	Parisi	OCT	OCT
2006	Iseri	OCT	OCT Model 3000 unit
2011	Kesler	OCT	Stratus OCT3
2013	Kirbas	SD-OCT	SD-OCT
2013	Shen	OCT	ZEISS Cirrus HD-OCT 4000 OCT
2014	Ascaso	OCT	Stratus OCT3
2014	Gharbiya	SD-OCT	Heidelberg Spectralis with Heidelberg Eye Explorer
2014	Polo	OCT	Cirrus and Spectralis OCT devices
2015	Bambo	OCT	Cirrus OCT
2015	Bayhan	SD-OCT	RTVue OCT system
2015	Feke	Laser Doppler retinal blood flow and OCT	Canon laser Doppler retinal blood flow instrument (CLBF 100, Canon) and Stratus OCT 3000
2015	Gao	OCT	Cirrus HD-OCT 4000
2015	Gunes	SD-OCT	Spectral-domain OCT (Spectral OCT SLO, OPKO / OTI Instrumentation)
2015	Jentsch	OCT and fluorescence lifetime imaging ophthalmoscopy (FLIO)	Cirrus OCT 4.0
2015	Oktem	OCT	Zeiss Cirrus HD 5000 model OCT device
2015	Salobrar-Garcia	OCT	OCT Model 3D OCT-1000
2015	Shi	OCT	ZEISS Cirrus HD-OCT 4000 OCT
2016	Choi	OCT	Cirrus High-Definition OCT (HD-OCT, software version 6.0)
2016	Cunha	OCT	Frequency domain-OCT (fd-OCT) using 3D OCT-2000, software version 8.11
2016	Garcia-Martin	OCT	Spectralis OCT
2016	Knoll	SD-OCT	SD-OCT using Spectralis HRA 1 OCT
2016	Pillai	SD-OCT	SD-OCT using Cirrus 4000 HD-OCT
2016	Trebbastoni	SD-OCT	Heidelberg Spectralis with Heidelberg Eye Explorer
2017	Ferrari	OCT	Fourier-domain OCT Heidelberg Spectralis
2017	Mendez-Gomez	SD-OCT	SD-OCT using Spectralis
2018	Bulut	OCT angiography (OCTA)	Commercial spectral domain OCTA
2018	Jiang	1. OCTA OCT	1. Zeiss Angioplex OCTA 2. Zeiss OCT
2018	Lahme	OCTA	RTVue XR Avanti with AngioVue
2018	Shao	SD-OCT	SD-OCT using Ultrahigh-resolution OCT (UHR-OCT) device
2018	Uchida	OCT	Cirrus 4000 HD-OCT

2019	Almeida	SS-OCT	SS-OCT (DRI OCT Triton)
2019	Cipollini	SD-OCT	SD-OCT RTVue
2019	Haan	SD-OCT	Heidelberg Spectralis spectral domain OCT
2019	Haan	1. Fundus photography 2. SD-OCT 3. OCTA	1. Topcon TRC 50DX type IA 2. Enhanced Depth Imaging OCT (EDI-OCT) using Heidelberg Spectralis spectral domain-OCT 3. Zeiss Model 5000 spectral domain-OCT with Angioplex
2019	Kim	OCT	CirrusHD-OCTsoftwareversion 6.0.0.599
2019	Salobrar-Garcia	OCT	OCT Model 3D OCT-1000 and OCT Spectralis
2019	Tao	OCT	Optovue AngioVue System
2019	Yoon	1. OCTA SD-OCT	1. Zeiss Cirrus HD-5000 SD-OCT with AngioPlex OCTA 2. Cirrus HD-OCT 5000 device
2019	Zhang	1. OCT OCTA	RTVue-XR OCT Avanti System with split-spectrumamplitude-decorrelation angiography (SSADA) software
2020	Ashimatey	OCTA	Spectral Domain OCTA: Cirrus HD-OCTA
2020	Chua	OCTA	Zeiss Cirrus HD-5000 Spectral-Domain OCT with AngioPlex Octa (Carl Zeiss Meditec)
2020	Criscuolo	SD-OCT and OCTA	1. SD-OCT 2. OCTA (XR Avanti AngioVue OCTA)
2020	Jindahra	OCT	Cirrus HD-OCT Model 4000 (Carl Zeiss Meditec)
2020	Jorge	OCT	Cirrus HD-OCT System (Carl Zeiss Meditec)
2020	Karakahya	OCT	OCT Cirrus HD-OCT, Carl Zeiss Ophthalamic System Inc
2020	Lemmens	OCT	RTVue XR Avanti (Optovue, Fremont, CA, USA; software version 2015.1.1.98)
2020	Mammadova	SD-OCT	High-resolution spectral-domain OCT imaging (Zeiss Cirrus 5000 HD-OCT)
2020	Marquie	OCT	3D − OCT Maestro
2020	Mavilio	OCT	Zeiss Cirrus HD OCT-500 (Carl Zeiss Meditec)
2020	Salobra-Garcia	OCT OCTA	Spectralis OCT, RTYue XR OCTA and Cirrus 5000 Angioplex
2020	Sanchez	OCT	3D-OCT Maestro, Fast map software version 8.40
2020	Sen	OCT	Cirrus HD-OCT Model 4000, Carl Zeiss Meditex
2020	Uchida	OCT	Cirrus 4000 HD-OCT (Zeiss, Oberkochen, Germany)
2020	Van De Kreeke	OCT	Spectralis, Heidelberg

		Fundas photography	Topcon TRC 50DX type IA
2020	Wu	OCTA	RTVue XR Avanti spectral domain OCT system (Optovue) with AngioVue software
2021	Biscetti	OCT, OCTA	Specttralis HRA + CT2 (Heidelberg Engineering)
2021	Janez-Garcia	OCT OCTA	3D OCT-1000 Topcon, Japan
2021	Li	OCT	Heidelberg Spectralis OCT
2021	Mei	OCTA	Cirruss 5000 Angioplex, Zeiss Meditex
2021	Robbins	OCTA	Zeiss Cirrus HD-OCT 5000 with Angioplex OCTA
2021	Robbins	OCT	Zeiss Cirrus HD-OCT 5000 Spectral Domain OCT With Angioplex OCT Angiography
2021	Wang	OCTA Fundas photography	Optovue Angiovie System (software ReVue version 2017.1.0.155) Version 1.5.0.0, NIDEK CO, LTD
2021	Wong	OCTA	Zeiss CIRRUS HD-OCT 5000,
2021	Zabel	SD-OCT OCTA	RTVue XR Avanti SD-OCT device wit\h AngioVue software
2021	Zhao	OCT	Stratus Oct Model 3000 (Carl Zeiss Meditec)
2022	Montorio	SD-OCT OCTA	RTVue XR Avanti with AngioVue XR Avanti AngioVue OCTA (software ReVue ver-sion 2017.1.0.151, Optovue Inc., Fremont, CA, USA)