Supplementary material A

Geometric parameters used in the FE model of the eye

Tissue	Units	Value
Eyeball Inner Radius	mm	12
Sclera Thickness	mm	0.9
Choroid Thickness	mm	0.2
Retinal Thickness	mm	0.249
Dura radius	mm	2
Papillary border tissue thickness	mm	0.1
Pia thickness	mm	0.08
LC Thickness	mm	0.3

Supplementary material B

Constants used in hemodynamics and oxygen consumption simulation

		Value	Reference
Blood parameters			
ρ	Blood density	$1060\ \mathrm{kg/m^3}$	[75]
$\mathrm{C_{MM}}$	Michellis-Menten constant for blood	$1 \times 10^{-3}\ \mathrm{mol/m^3}$	[76]
$\mathrm{C_{Hb}}$	Oxygen concentration of in a haemoglobin	$0.1 \times 10^{-3}\ \mathrm{mol/m^3}$	[38]
H	Inlet Haematocrit	0.45	[38]
α	Oxygen solubility coefficient in Tissue	$1.45 \times 10^{-3}\ \frac{\mathrm{mol}}{\mathrm{m^3}}$ /mmHg	[76]
K	Intravascular resistance to oxygen	$1.06 \times 10^{-8}\mathrm{s/m^2}$	[40]
$\mathrm{C_{In}}$	Inlet free oxygen concentration	$0.12\ \mathrm{mol/m^3}$	[39]
Tissue parameters			
D	Diffusion coefficient of oxygen in tissue	$2.385 \times 10^{-9}\ \mathrm{m^2/s}$	[77]
$\mathrm{M_0}$	Maximum oxygen consumption	$0.000225\ \frac{\mathrm{mol}}{\mathrm{m^3}}/\mathrm{s}$	Approximated
Geometric parameters			
$\mathrm{R_c}$	Initial Blood Capillary radius	$4\ \mu\mathrm{m}$	Approximated