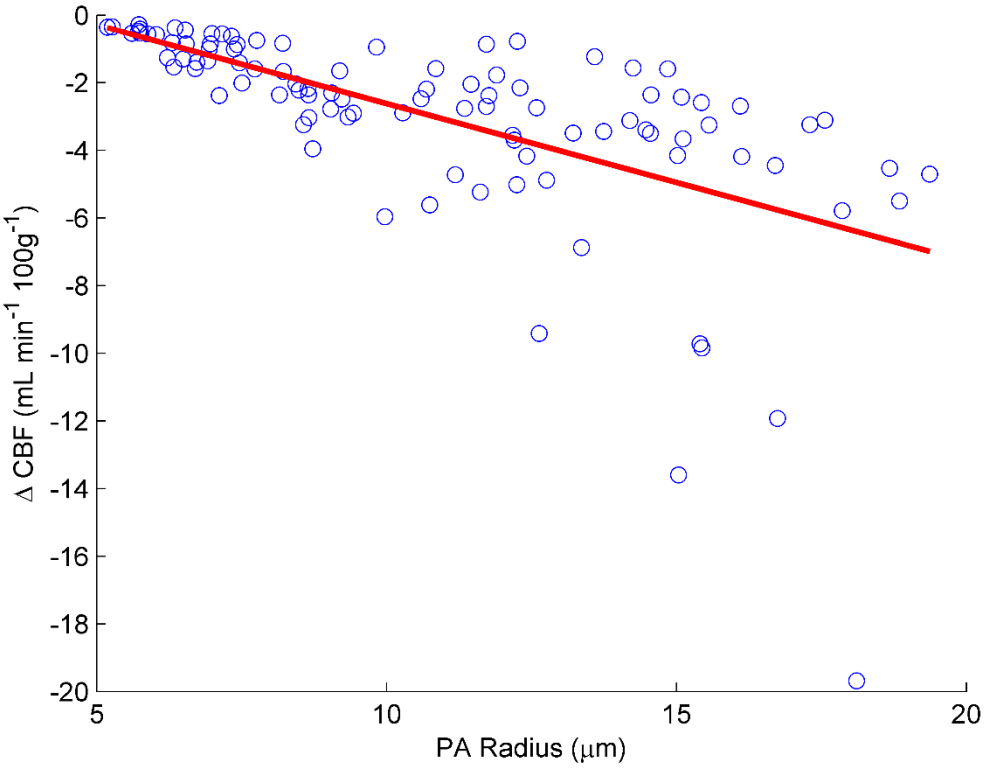
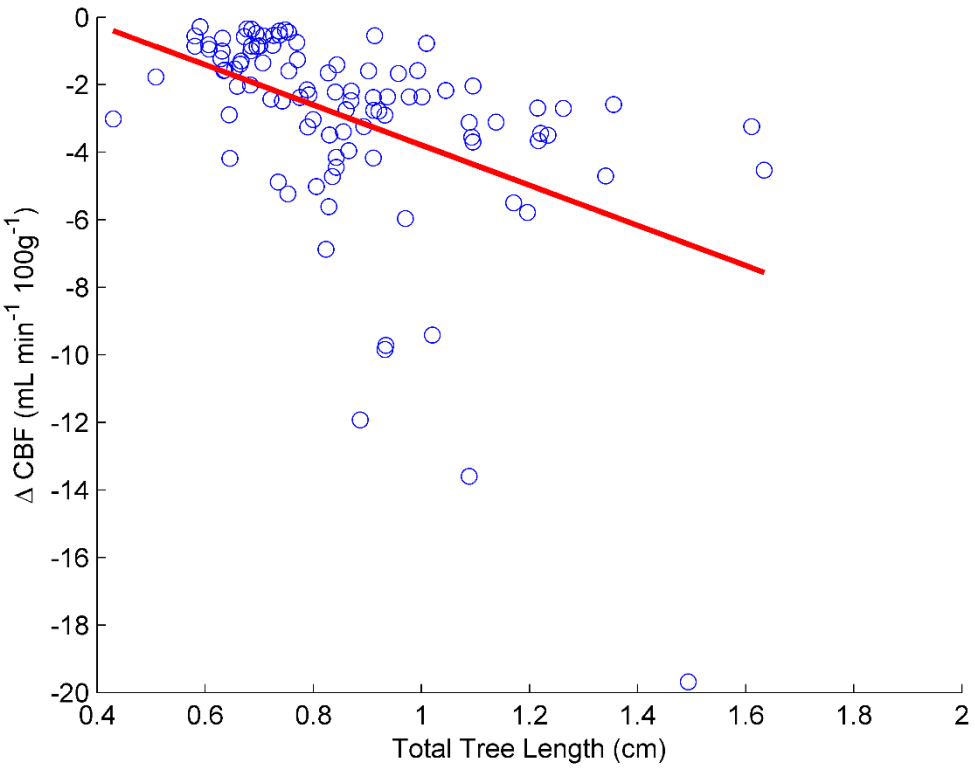
Supplementary Material 2 – How CBF is affected by occluded tree characteristics

Analysing trends in the penetrating arterioles chosen for occlusion by plotting the drop in CBF against: radius of tree occluded, tree volume, total tree length, number of terminal vessels, number of total vessels in tree, and distance of chosen arteriole from the centre of the overall cuboid (to analyse boundary effects).

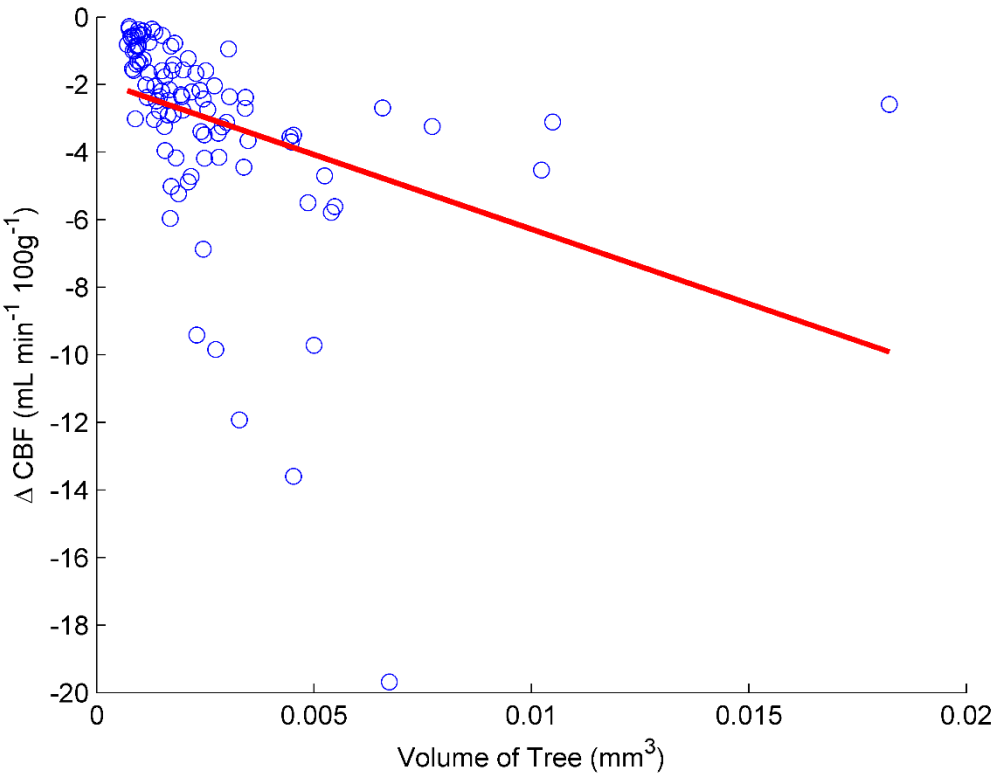
Case 1 vessels: mean 20 µm arterioles and mean 50 µm venules



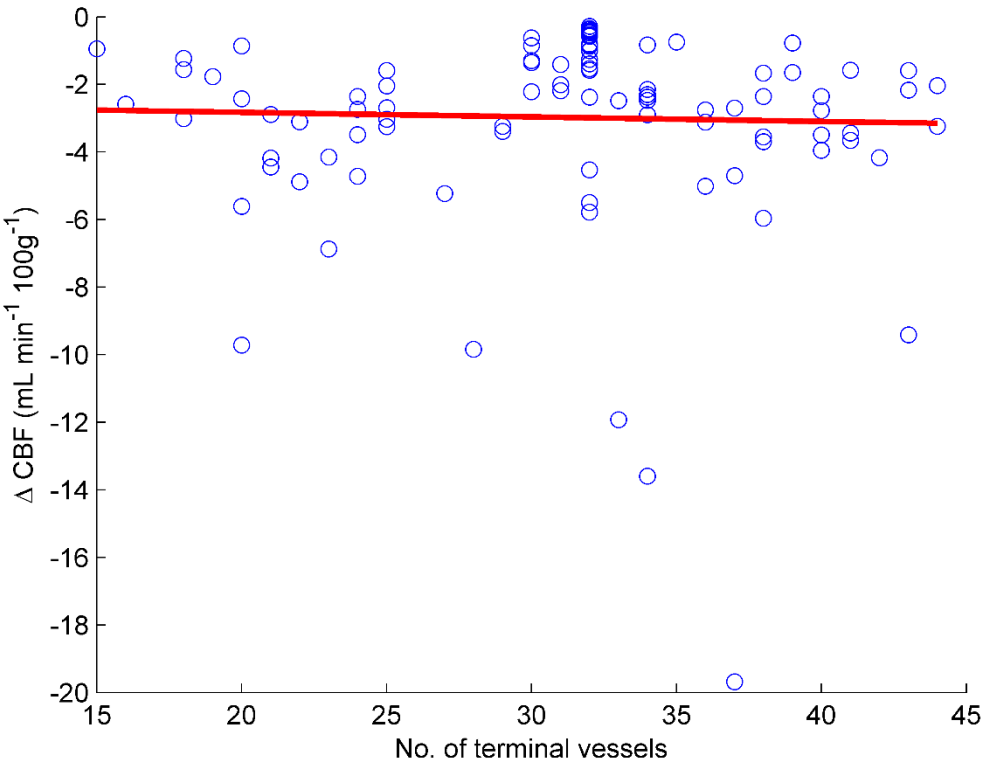
S.2.1 Radius of the occluded penetrating arteriole vs. drop in CBF for that simulation. Normalized gradient = -0.4591



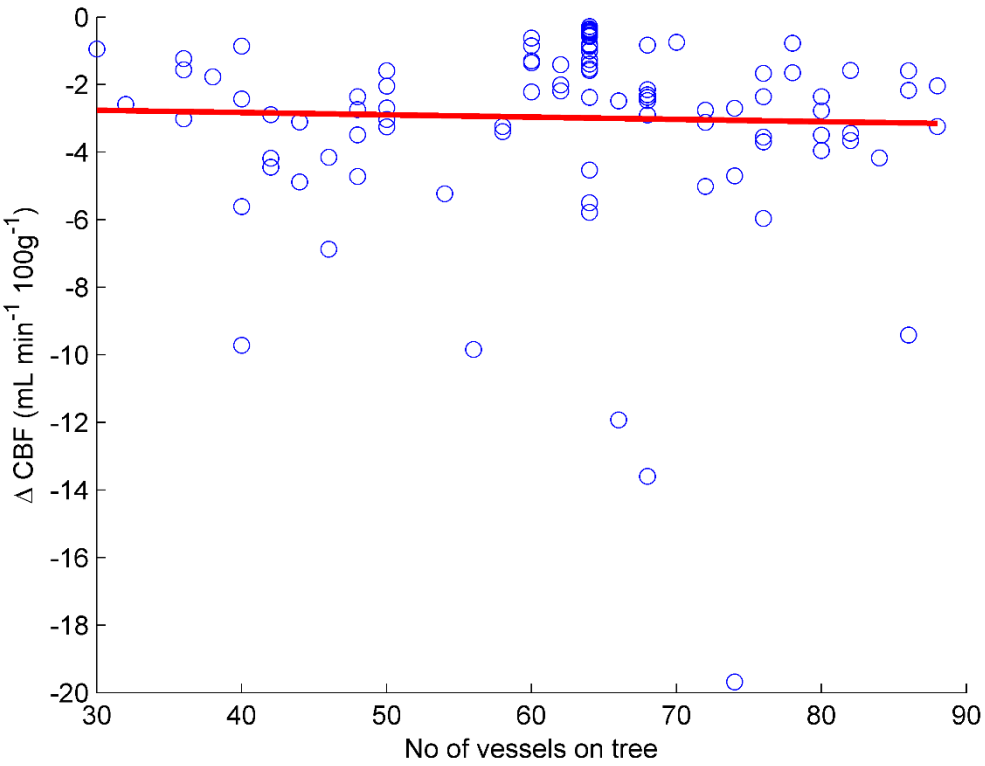
S.2.2 Total length of the occluded tree vs. drop in CBF. Normalized gradient = -0.4940



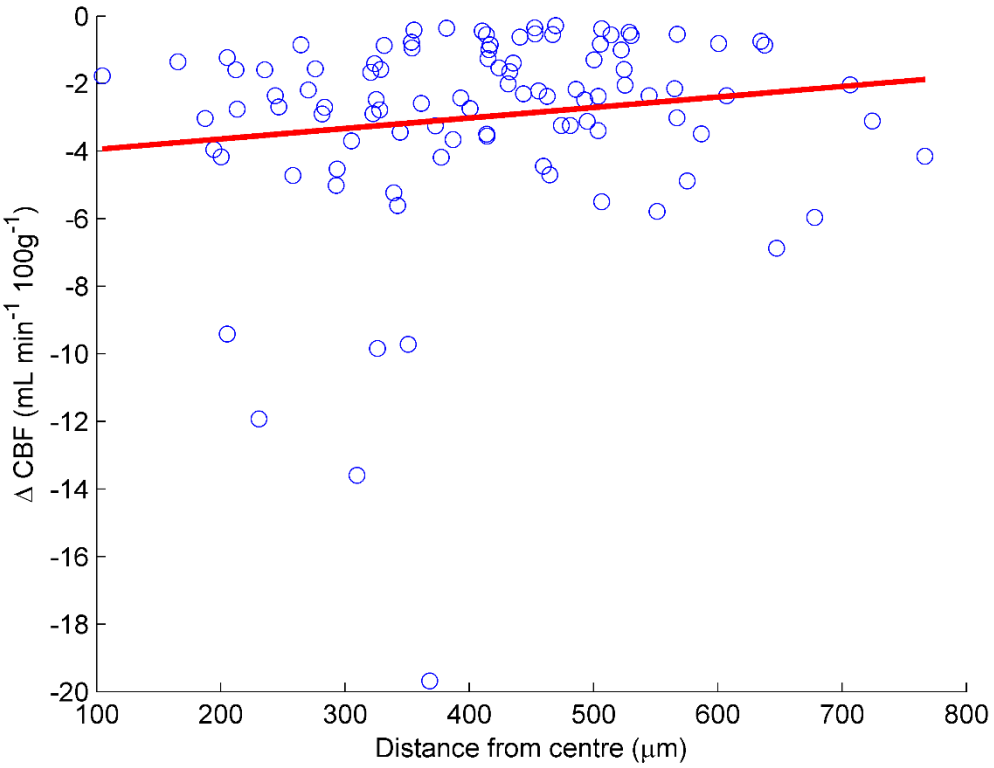
S.2.3 Volume of occluded tree vs. drop in CBF. Normalized gradient = -0.4088



S.2.4 Number of terminal vessels per tree vs. drop in CBF. Normalized gradient = -0.0301

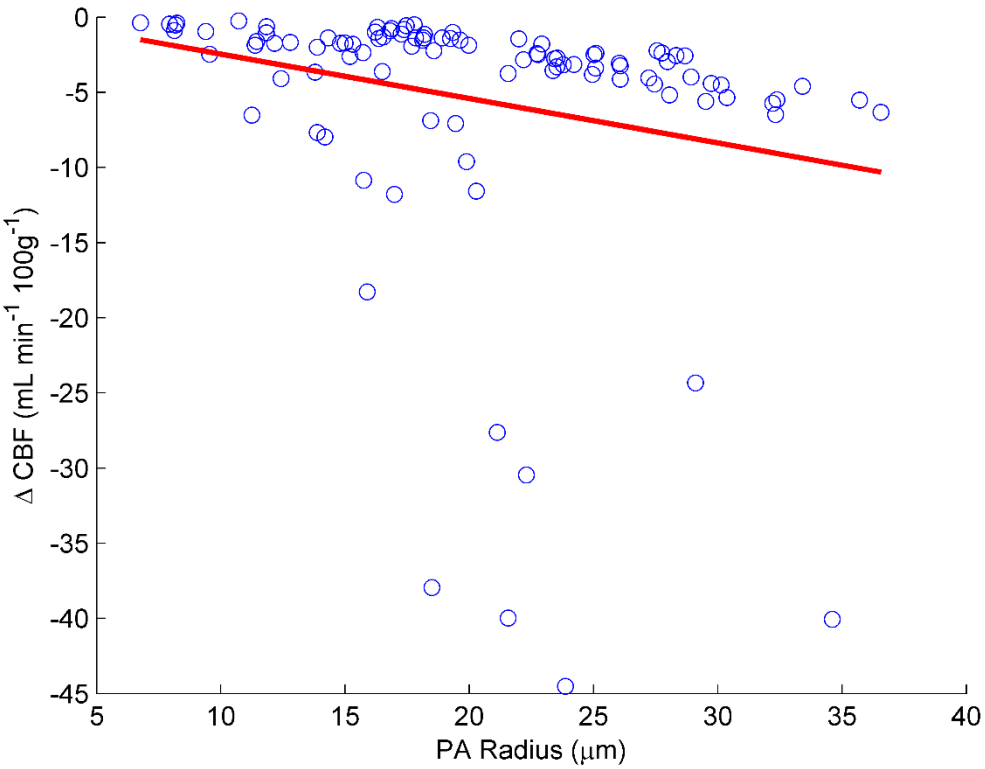


S.2.5 Total number of vessels on tree vs. drop in CBF. Normalized gradient = - 0.0301

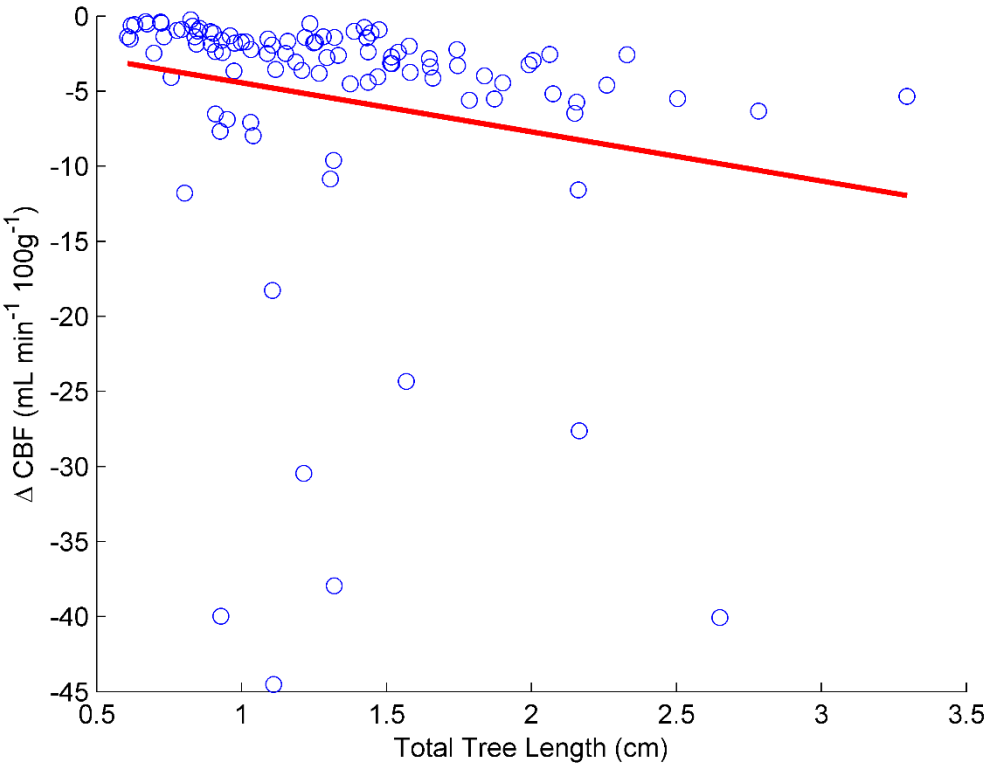


S.2.6 Occluded penetrating arteriole distance from the centre of the overall simulated cuboid vs. drop in CBF. Normalized gradient = 0.1210

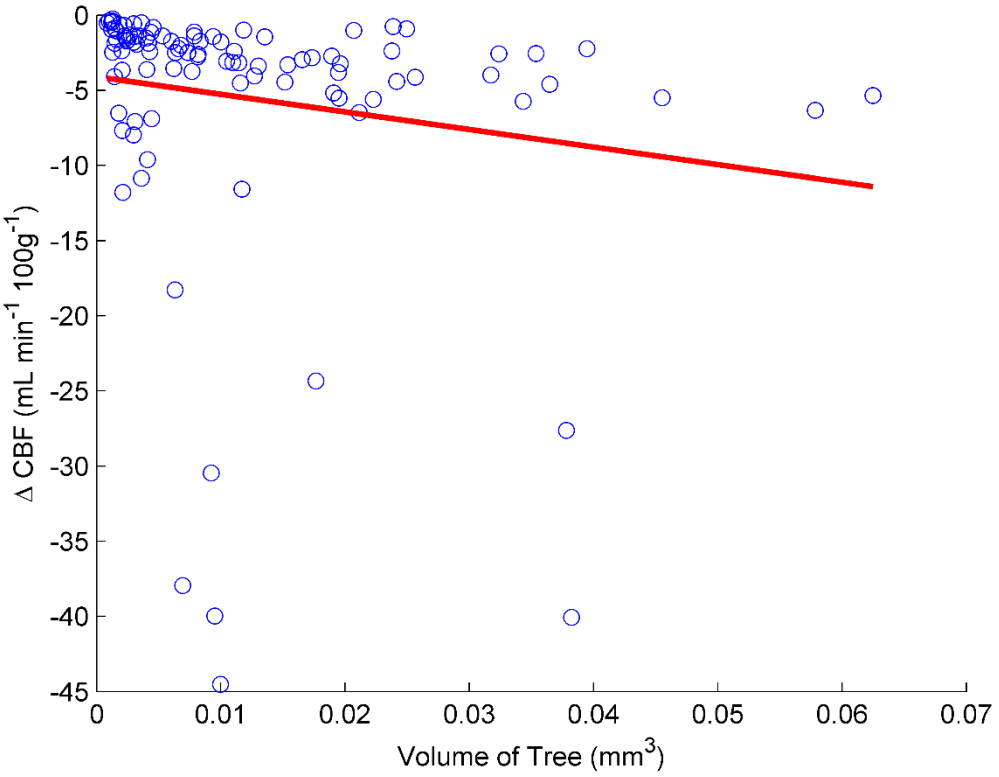
Case 2 vessels: mean 40 µm arterioles and mean 110 µm venules



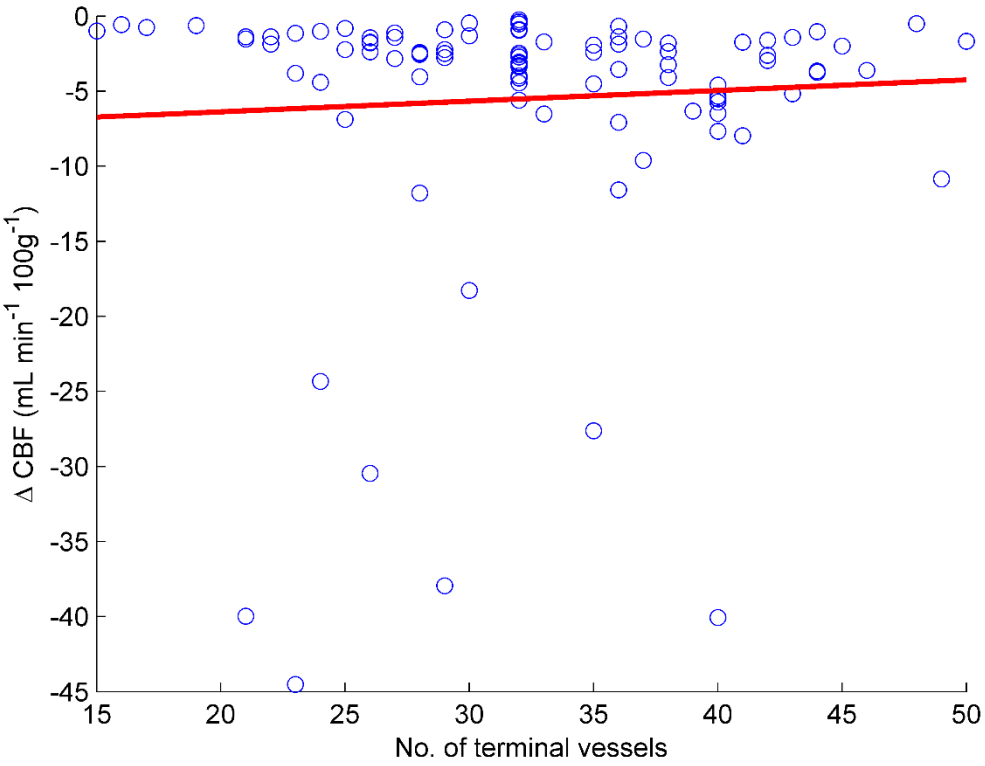
S.2.7 Radius of the occluded penetrating arteriole vs. drop in CBF for that simulation. Normalized gradient = -0.2426



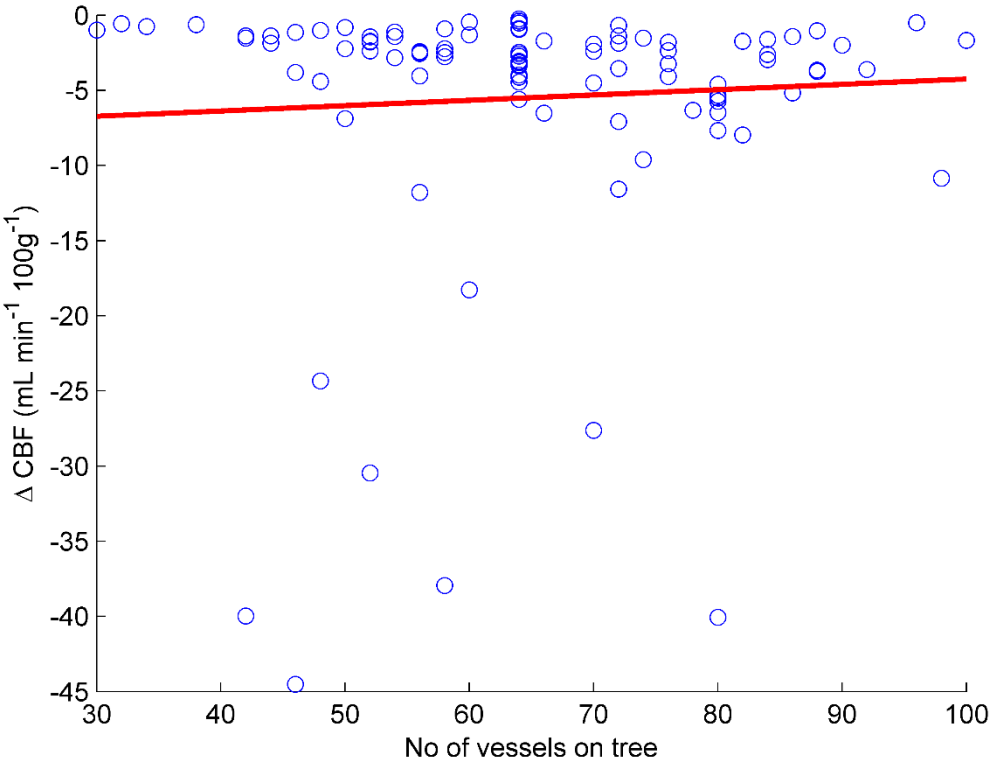
S.2.8 Total length of the occluded tree vs. drop in CBF. Normalized gradient = -0.2419



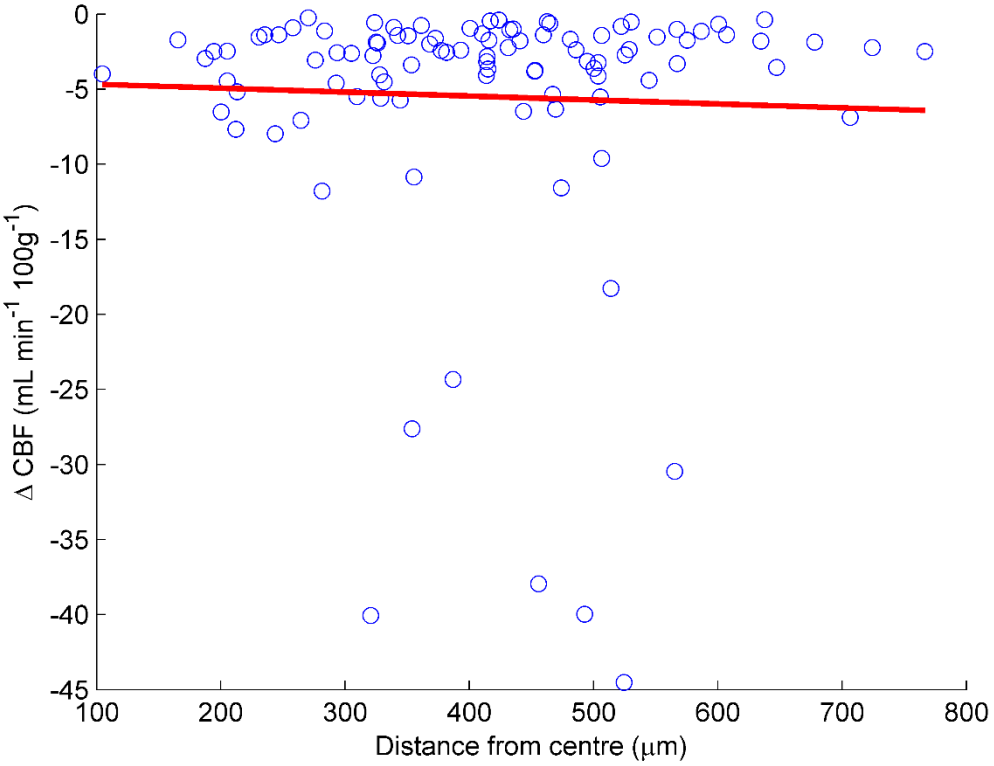
S.2.9 Volume of occluded tree vs. drop in CBF. Normalized gradient = -0.1641



S.2.10 Number of terminal vessels per tree vs. drop in CBF. Normalized gradient = 0.0797



S.2.11 Total number of vessels on tree vs. drop in CBF. Normalized gradient = 0.0797



S.2.12 Occluded penetrating arteriole distance from the centre of the overall simulated cuboid vs. drop in CBF. Normalized gradient = -0.0453