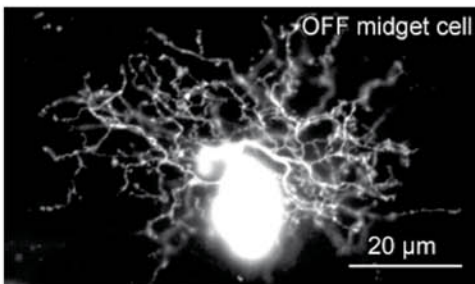


Distribution of bipolar input to midget and parasol ganglion cells in marmoset retina

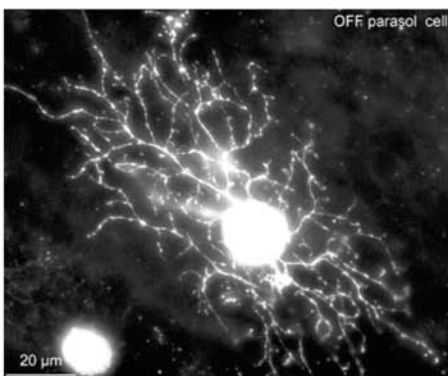


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Different types of retinal ganglion cell show differences in their response properties. Here we investigated the question of whether these differences are related to the distribution of the synaptic input to the dendritic tree. We measured the distribution and density of synaptic input to the dendrites of midget and parasol ganglion cells in the retina of the marmoset, *Callithrix jacchus*. Ganglion cells were retrogradely labeled by dye injection into parvocellular or magnocellular regions of the lateral geniculate nucleus and subsequently photo-filled. (01).



Presumed bipolar cell synapses were identified immunocytochemically. For all cells, bipolar synapses were distributed across the entire dendritic tree (02).



Midget ganglion cells showed similar densities of bipolar input and the densities were comparable in different regions of the dendritic tree (03).

Midget cells



Parasol cell



20 µm

Our findings suggest that differences in the response characteristics of midget and parasol cells are not due to differences in the density of synaptic input to their dendritic tree.

Distribution of blue-on and blue-off responses. Four schematic sections through the lateral geniculate nucleus (LGN) are shown with silhouettes of the main parvocellular (PC) and magnocellular (MC) layers.

The majority of blue-off cells is located outside the PC and MC layers, in the koniocellular layers (kC) of the LGN. Blue-on cells.

Reference:

Eriköz B, Jusuf PR, Percival KA, Grünert U. (2008). Distribution of bipolar input to midget and parasol ganglion cells in marmoset retina. *Visual Neuroscience* 25:67-76.