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Decoding the topology of vascular organization¹

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Distribution and structural networks permeate virtually all life, from the cellular to the organismic level. They have allowed organisms to grow in size and complexity by ensuring efficient distribution of nutrients and structural support. Given their importance, these vascular and structural webs have been under strong evolutionary selection and their form frequently reflects important aspects of their function. We discuss the design principles behind the evolution of the architecture and topology of vascular and structural networks and present some examples (leaf venation, arterial vasculature of the neocortex and others) that elucidate them.

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