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Review [J Alzheimers Dis.](#) 2022;90(3):1045-1055. doi: 10.3233/JAD-220632.

Photobiomodulation for Hypertension and Alzheimer's Disease

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Abstract

Although the cause(s) of Alzheimer's disease in the majority of cases remains elusive, it has long been associated with hypertension. In animal models of the disease, hypertension has been shown to exacerbate Alzheimer-like pathology and behavior, while in humans, hypertension during mid-life increases the risk of developing the disease later in life. Unfortunately, once individuals are diagnosed with the disease, there are few therapeutic options available. There is neither an effective symptomatic treatment, one that treats the debilitating cognitive and memory deficits, nor, more importantly, a neuroprotective treatment, one that stops the relentless progression of the pathology. Further, there is no specific preventative treatment that offsets the onset of the disease. A key factor or clue in this

quest for an effective preventative and therapeutic treatment may lie in the contribution of hypertension to the disease. In this review, we explore the idea that photobiomodulation, the application of specific wavelengths of light onto body tissues, can reduce the neuropathology and behavioral deficits in Alzheimer's disease by controlling hypertension. We suggest that treatment with photobiomodulation can be an effective preventative and therapeutic option for this neurodegenerative disease.

Keywords: Cell death; infrared; mitochondria; non-pharmacological; red; vascular pathology.

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Figures

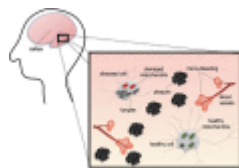


Fig. 1 Schematic diagram of the pathology...

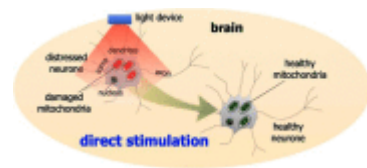


Fig. 2 Schematic diagram outlining the direct...

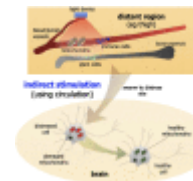


Fig. 3 Schematic diagrams outlining the indirect...

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