

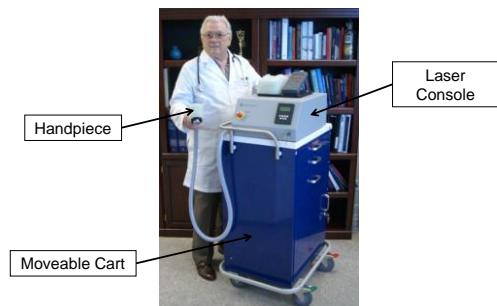
*Photothera
NeuroThera® Laser System (NTS) for
treatment of acute ischemic stroke*

Overview

- Non-Invasive, near-infrared laser energy treatment for ischemic stroke
- Two human clinical trials completed, third under way

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NeuroThera Laser System



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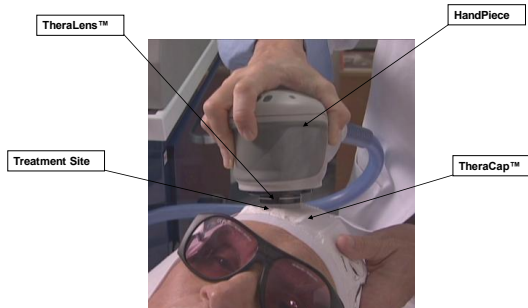
NeuroThera® System and Treatment



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*Subjects presented are actors and not actual patients or doctors

Procedure Lasts Approximately One Hour



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*Subjects presented is actor and not actual patient

Background - How Does it Work

- Mechanism of action not fully determined
- Experimental evidence
 - In healthy (non-stroke) brain, the mitochondria use oxygen to synthesize ATP
 - Mitochondria can absorb infra-red wavelength light (Cytochrome C Oxidase photo-receptor)
 - Mitochondria treated with IR light generate a proton gradient, leading to synthesis of ATP
 - Rescues neurons in vitro and in animal models

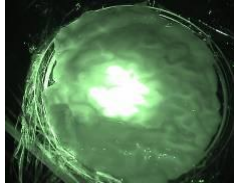
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Background -Transmission Studies

- 808 nm wavelength light (infrared) penetrates > 2 cm through bone to reach brain



Skull Case



15 mm thickness

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* Infrared camera used to take all pictures

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- Confirmatory clinical trial for stroke now underway
 - Potential future uses for laser energy
 - Treat damaged neurons in Alzheimer's disease
 - Treat damage muscles in heart disease

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