

## **Regular thermal therapy may promote insulin sensitivity while boosting expression of endothelial nitric oxide synthase – Effects comparable to those of exercise training**

- Mark F. McCarty
- Jorge Barroso-Aranda,
- Francisco Contreras

Natural Alternatives International, 1185 Linda Vista Dr., San Marcos, CA 92078, USA  
Oasis of Hope Hospital, Tijuana, Mexico

---

### **Summary**

Regular thermal therapy, using saunas or hot baths, has the potential to improve impaired insulin sensitivity and boost endothelial expression of the “constitutive” isoform of nitric oxide synthase – effects, analogous to those of aerobic training that should promote vascular health. Previous clinical reports suggest that hot tubs may be beneficial for diabetic control, and that sauna therapy can decrease blood pressure in essential hypertension and provide symptomatic benefit in congestive heart failure. For those who lack ready access to a sauna or communal hot tub, regular hot baths at home may suffice as practical thermal therapy. Thermal therapy might be viewed as an alternative to exercise training in patients too physically impaired for significant aerobic activity.

---

There are no figures or tables for this document.

Corresponding author. Address: Natural Alternatives International, 1185 Linda Vista Dr., San Marcos, CA 92078, USA.

Copyright © 2009 Elsevier Ltd. All rights reserved.