The Heat Prescription:
Sauna as a Treatment Modality

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My Favorite Sauna

- Grandfather’s Ice Fishing House in Northern Minnesota
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The Heat Prescription: 
Sauna as a Treatment Modality

• Prescribing lifestyle interventions
  • Diet
  • Exercise
  • Sauna?

• Exercise is Medicine
• Sauna is Medicine?
  • Sauna research needed
    • Population studies helpful
    • Clinic trials important
    • Compare sauna to exercise, other interventions
    • Compare traditional to infrared sauna
Exercise is Medicine

- Global health initiative by ACSM
- Founded in 2007 make physical activity a standard in health care
- Connects health care providers with evidence based research on health benefits of exercise
- “If we had a pill that contained all the benefits of exercise, it would be the most widely prescribed drug in the world”
  — Ron Davis, M.D., President of the American Medical Association
The Exercise Prescription

- **Diagnosis:** Hypertension

- **Prescription:**
  - Losartan: 50 mg daily
  - Exercise: light jog 20 minutes 3x/week
  - Either or both - options and motivation for patients
Sauna is Medicine

- Hard science needed
- Alternative medicine claims
- Funding concern (no drug companies)

- Need large scale population studies and clinical trials

- Sauna Prescription: Traditional Sauna 190 deg F for 20 min 3x/week
International Journal of Sauna Studies

- Founded 2017 by Dr. Jack Tsonis and Dr. Jari Laukkanan
- Revitalize sauna research as an academic field
- Areas of study
  - Health science
  - History and culture
  - Technology and design
Health Science Research

• Important diseases to study:
  – Hypertension
  – Type 2 diabetes
  – Depression and anxiety
  – Asthma and COPD
  – CHF
  – Insomnia
  – Hyperlipidemia
  – Dementia
  – Arthritis

• Benefits of sauna suggested for these diseases in limited prior study
Health Science Research

- Population Studies
  - Understanding large groups
  - Share common diseases or behaviors

- Clinical Trials
  - Assign subjects randomly
  - Different intervention arms
  - Manipulate environment to modify processes or outcome
  - Evaluate effect of intervention on physical or behavioral outcome
Clinical Sauna Study

- Factorial Design
  - Allows for smaller sample size
  - Tests two conditions vs no treatment
  - Decide on topic
    - Depression, hypertension, blood sugar, etc
  - Four groups:
    - Sauna
    - Exercise
    - Both sauna and exercise
    - Neither sauna nor exercise
Sauna Therapy and Diabetes

• Compare exercise to sauna for blood sugar control
  – Hbg A1C easy to measure
  – Physical training increases insulin sensitivity in muscles and increases transport of glucose due to larger capillary network and blood flow (also occurs in sauna)

• NEJM study: 3234 subjects showed more A1C benefit from lifestyle changes compared to oral medication (A)

• Compare sauna to glucophage?
Sauna Therapy and Depression or Anxiety

• Compare sauna to exercise or medication for mental health
• Parasympathetic nervous system
• Blumenthal study: (B)
  – 155 patients with depression
  – Exercise similar to medication
Sauna Therapy and Hypertension

- Compare sauna to exercise or medication for blood pressure control
  - A decrease in 20 mm Hg systolic cuts cardiac risk factors in half (Lewington 2002) (C)
  - Physical training lowers blood pressure by neuro-hormonal and vascular adaptations (exercise and heat adaptations are similar)
  - Blood pressure is easy to monitor
Traditional vs Infrared Sauna Study
The Sauna Prescription:

- **Conclusions**
  - Exercise is Medicine
  - Sauna research needed to support Sauna is Medicine
  - Compare to exercise in clinical trials for diabetes, HTN, etc
  - Infrared vs Traditional Sauna
  - Help health care providers prescribe heat therapy based on evidence from solid research
Resources:

• (A) “Reduction in Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin”, Diabetes Prevention Program Research Group, New England Journal of Medicine 2002; 346: 393-403

• (B) “Effects of Exercise Training on Older Patients With Depression”, James A. Blumenthal PhD, et al, Archives of Internal Medicine 1999; 159 (19):2349-2356


• Exercise is Medicine:
  – www.exerciseismedicine.org

• International Journal of Sauna Studies: http://saunaresearch.org