



UNIVERSITÀ DEGLI STUDI
DI MILANO



Esercizio fisico e salute: possibile ruolo di “percorsi” caratterizzati dal punto di vista cardiovascolare e metabolico

Fabio Esposito, MD



“Le terme tra sostenibilità ambientale e promozione della salute”

One Health: prevenzione, cura e turismo

Mercoledì 23 Settembre 2020



Cardiovascular disease



- ✓ *heart disease*
- ✓ *stroke*
- ✓ *hypertension*

Heart disease and stroke: two of the leading causes of death in the world, major causes of disability and the principal causes of cardiovascular death





Risk factors for cardiovascular disease

- ✓ *high blood pressure*
- ✓ *diabetes*
- ✓ *high levels of low-density lipoprotein (LDL-cholesterol)*



Unhealthy behaviors:

- ✓ tobacco use
- ✓ poor diet
- ✓ physical inactivity
- ✓ obesity
- ✓ alcohol abuse



Plus:

family history of cardiovascular disease share common environments and risk factors that increase their likelihood of having a heart attack or stroke



General benefits of physical exercise:

- ✓ *scientific link between regular physical activity and various measures of cardiovascular health;*
- ✓ *more active or fit individuals tend to develop less coronary heart disease (CHD) than their sedentary counterparts do;*
- ✓ *if CHD develops in active or fit individuals, it occurs at a later age and tends to be less severe.*



Endothelial Function

Repeated Thermal Therapy Improves Impaired Vascular Endothelial Function in Patients With Coronary Risk Factors

Masakazu Imamura, MD,* Sadatoshi Biro, MD,* Takashi Kihara, MD,* Shiro Yoshifuku, MD,* Kunitsugu Takasaki, MD,* Yutaka Otsuji, MD, FACC,* Shinichi Minagoe, MD,* Yoshifumi Toyama, MD† Chuwa Tei, MD, FACC*

Kagoshima, Japan

*Repeated sauna treatment **improves impaired vascular endothelial function** in the setting of coronary risk factors, suggesting a therapeutic role for sauna treatment in patients with risk factors for atherosclerosis.*





Clinical Implications of Thermal Therapy in Lifestyle-Related Diseases

SADATOSHI BIRO, AKINORI MASUDA, TAKASHI KIHARA, AND CHUWA TEI¹

Department of Cardiovascular, Respiratory and Metabolic Medicine, Graduate School of Medicine, Kagoshima University, Kagoshima 890-8520, Japan

Systemic thermal therapy, such as taking a warm-water bath and sauna, induces **systemic vasodilation**. It was found that repeated sauna therapy (60 degrees C for 15 min) **improved hemodynamic parameters, clinical symptoms, cardiac function, and vascular endothelial function** in patients with congestive heart failure. Vascular endothelial function is impaired in subjects with lifestyle-related diseases, such as hypertension, hyperlipidemia, diabetes mellitus, obesity, and smoking. Sauna therapy also improved endothelial dysfunction in these subjects, suggesting a **preventive role for atherosclerosis**. In **normal-weight patients with appetite loss**, repeated sauna therapy increased plasma ghrelin concentrations and daily caloric intake and improved feeding behavior. **In obese patients**, the body weight and body fat significantly decreased after 2 weeks of sauna therapy without increase of plasma ghrelin concentrations. On the basis of these data, **sauna therapy may be a promising therapy for patients with lifestyle-related diseases**.





IJCP THE INTERNATIONAL JOURNAL OF
CLINICAL PRACTICE

Health benefits of physical activity in older patients: a review

[T. Vogel](#), [P.-H. Brechat](#), [P.-M. Leprêtre](#), [G. Kaltenbach](#), [M. Berthel](#), [J. Lonsdorfer](#)

First published: 15 January 2009

Promotion of **regular physical activity** is one of the **main non-pharmaceutical measures** proposed to older subjects as low rate of physical activity is frequently noticed in this age group. Moderate but regular physical activity is associated with a **reduction in total mortality** among older people, a positive effect on **primary prevention of coronary heart disease** and a significant **benefit on the lipid profile**. Improving body composition with a **reduction in fat mass, reducing blood pressure and prevention of stroke, as well as type 2 diabetes**, are also well established. **Prevention of some cancers** (especially that of breast and colon), **increasing bone density** and **prevention of falls** are also reported. Moreover, some longitudinal studies suggest that physical activity is linked to a **reduced risk of developing dementia and Alzheimer's disease** in particular.





WILDERNESS & ENVIRONMENTAL MEDICINE, 25, 329–334 (2014)

BRIEF REPORT

Effects of Hiking at Moderate and Low Altitude on Cardiovascular Parameters in Male Patients With Metabolic Syndrome: Austrian Moderate Altitude Study

Günther Neumayr, MD; Dietmar Fries, MD; Markus Mittermayer, MD; Egon Humpeler, MD; Anton Klingler, PhD; Wolfgang Schobersberger, MD; Reinhard Spiesberger, PhD; Rochus Pokan, MD; Peter Schmid, MD; Robert Berent, MD

*A 3-week hiking vacation at moderate or low altitude is **safe for patients with metabolic syndrome** and provides several **improvements in their cardiovascular parameters**. The cardiovascular benefits achieved are more likely to be the result of **regular physical activity** than the altitude-specific effect of a mountain environment.*



UNIVERSITÀ
DEGLI STUDI
DI MILANO



Hikes profiling and characterization

- *Biomechanical and Physiological factors*
- *Pulmonary oxygen uptake, heart rate response, hiking speed*
- *Energy demands and consumption at different speed*
- *Heart rate monitoring, body mass*





Thank you



UNIVERSITÀ
DEGLI STUDI
DI MILANO

