Do short and more frequent spa vacations show health effects?

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Medical Facts in Health Tourism

Fact 1: Not every product that is sold as „healthy“ really is „healthy“

Fact 2: The health-oriented customer/tourist will look for health-related products that are evidence-based and sustainable

NEED: Development and expansion of evidence-based health tourism
1998 – 2006 Austrian Moderate Altitude Study I (AMAS)

Are hiking holidays for vacationer with Metabolic Syndrome really healthy?
How safe are hiking holidays in the Alps?
AMAS I: Time course and procedures

- Pilot Study: *Lech, Arlberg* (1700 m), n=22
- Main Study: *Obertauern* (MA; 1700 m), n = 36 vs. *Bad Tatzmannsdorf* (LA; 200 m), n=35

Procedures
- 3-weeks vacation in 4**** Spa/Wellness Hotels
- No dietary restrictions!
- 5 – 6 coached hiking tours per week (1 – 4 hrs each) individually adapted by pulse control
- In addition active and passive regenerations in the hotels (sauna, steam bath, mental coaching, yoga etc.)
AMAS I: Changes in Metabolic Parameters

- Reduction of total cholesterol: $-13 \text{ mg/dl (MA), } -14 \text{ mg/dl (LA)}$
- Reduction of low density lipids (LDL): $-11 \text{ mg/dl (MA), } -13 \text{ mg/dl (LA)}$
- Reduction in total fat mass: $-3,33 \text{ kg (MA), } -5,3 \text{ kg (LA)}$

Greie et al., J Endocrin Invest 2006
AMAS I: Reduction of blood pressure after 3-weeks hiking holidays

Figure 1. Results of ambulatory blood pressure monitoring for mean systolic blood pressure (SBP) and diastolic blood pressure (DBP) at the start and at the end of the 3-week vacation in the moderate altitude (MA) group (left row [blue lines = start MA; pink lines = end MA]) and the sea level (SL) group (right row [blue lines = start SL; pink lines = end SL]).
AMAS I: Psychological results

Figure 1 Means and standard deviations of perceived health associated with vacationing at low (circles) and moderate (triangles) altitude at 2 weeks before (T1), the second day after (T2), the 18th day after (T3) and 7 weeks after vacation (T4).

Research Question:
Is a one week lasting alpine vacation adequate to improve bio-psychological parameters in stressed vacationeers?

Design:
6-night active spa/wellness vacation of physically fit, but mentally stressed persons working as managers (Lech, Arlberg, 1.700 m)

Schobersberger et al., S&B 2009
Trend: Short-term vacation

- Limited time resources
- Higher workload
- More intensive period of recovery (Cetron & Davies, 2010)
- All-year round tourism product
• Short-term vacation (4 nights)
• Participants: Middle-management, high stress level (n=63)
• 3-armed study: One short vacation vs. three consecutive short vacations vs. 4 nights off work at home
• Effects on:
  – Subjective well-being (EBF, PSQ)
  – Objective physiological responses (Heart rate variability; HRV) → indicator for sleep quality
Subjective Parameters:
1 Short-term Vacation vs. Staying at Home
Immediate Effects

T1: Beginning of vacation
T2: End of vacation
*: Compared to T1
- Strain ≠ Stress
- Significant difference between the groups
- Strain decreased to a greater extent in the vacation group

T1: Beginning of vacation
T2: End of vacation
*: Compared to T1
Long-term Effects

T1: Beginning of vacation
FU1: 15 days post-vacation
FU2: 30 days post-vacation
FU3: 45 days post-vacation
*: Compared to T1
Take home I

• Positive effects in all parameters
• Significant long-term effects until 45 days after end of vacation
• No differences between the groups except for strain (staying at home vs. hotel vacation)
1 Short-Term Vacation vs.
3 Short-Term Vacations vs.
Staying at Home
As compared to T1

Significant improvement in all groups

T1: Beginning of vacation
FU1: 15 days post-vacation
FU2: 30 days post-vacation
FU3: 45 days post-vacation

*: Compared to T1
T1: Beginning of vacation
FU1: 15 days post-vacation
FU2: 30 days post-vacation
FU3: 45 days post-vacation
*: Compared to T1

Significant improvement in all groups
Objective Parameter – Sleep Quality

- **Heart Rate Variability** as measure for the autonomic nervous system

„Good“ vs. „Bad burning fire“
Objective Parameter – Sleep Quality

- **1\textsuperscript{st} Vacation**: comparison first and last night → impairment of sleep quality
- **3\textsuperscript{rd} Vacation**: comparison first and last night → no improvement during vacation, however

→ Sleep quality during 3\textsuperscript{rd} vacation on a higher level as compared to 1\textsuperscript{st} vacation

„BOOSTERING“
Take home II

• Positive effects in all perceived parameters
• Unexpected long-term effects until 45 days after end of vacation (one and three short vacations)
• Boostering of sleep quality with repeated vacations
• Challenge -> integrate AMAS III results into new health tourism products
  – Short term vacation packages in spa hotels
  – Day Spa
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