

Low speed jogging with MBT: does it make sense?

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Scientific data on the effects of MBT

B. Nigg, 2004/2006:

- Increase of muscle activities of the lower extremities between 9 and 19%
- Increase of oxygen uptake while walking by 2.5%
- reduced joint loading while walking

Romkes et al. 2005:

- change of the walking movement pattern; increased instability in the ankle joint
- which results in higher joint stabilising muscle activity

MBT – a training device? For which training goals??

- to stabilise posture??
- to optimise walking movement pattern??
- to strengthen large and small muscles in low extremities??
- to improve fitness with low speed running for people
 - with low fitness and little running experience??
 - with knee and hip pain??
 - with low back pain??

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MBT – a training device? To improve fitness with low speed running?

- how high is physiological and metabolic loading while running with MBT compared to jogging shoes??
- is energy consumption higher while running with MBT compared to jogging shoes?
- can the same training effects be reached by shorter training sessions or with reduced running speed (benefit for pain patients) ?

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Methods

30 subjects (18 female; 12 male)

- Mean age: 24 Jahre
- medium fitness level
- BMI between 21 and 23
- special introduction into how to use MBT

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Untersuchungsmethodik

Pre test:

Determination of the individual 2 mmol lactat threshold (treadmill; normal jogging shoes)

Main testing:

4 measurements per person; each measurement: running on the treadmill for 30 min at the individual 2 mmol Lac threshold. Jogging shoe – MBT – jogging shoe – MBT. 2 days of rest in between each testing.

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Methods

Measurement systems and analysed parameters

Spirometry: Cosmed K4b²

- Heart rate
- Oxygen uptake
- Ventilation
- Energy expenditure

Biosen 5040

- Lactate analysis



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Methods

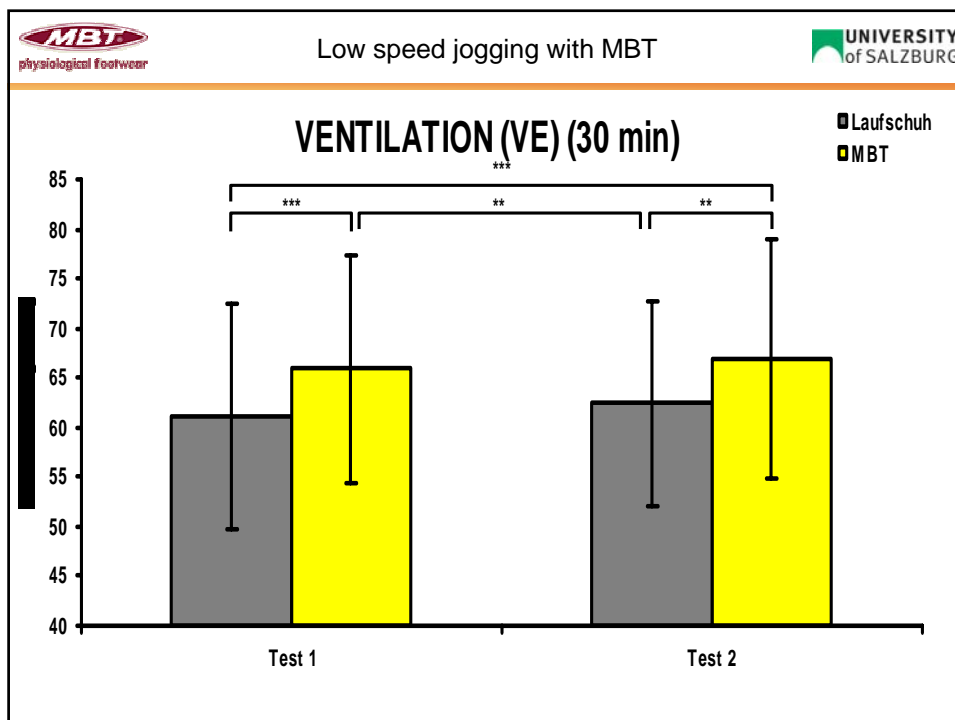
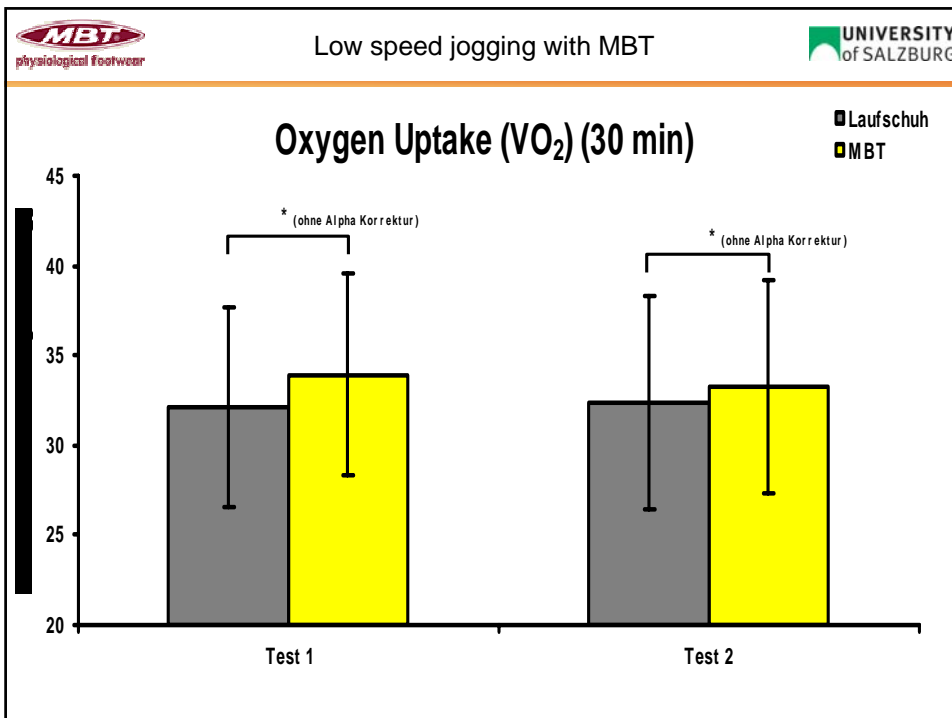
Details of the testing session

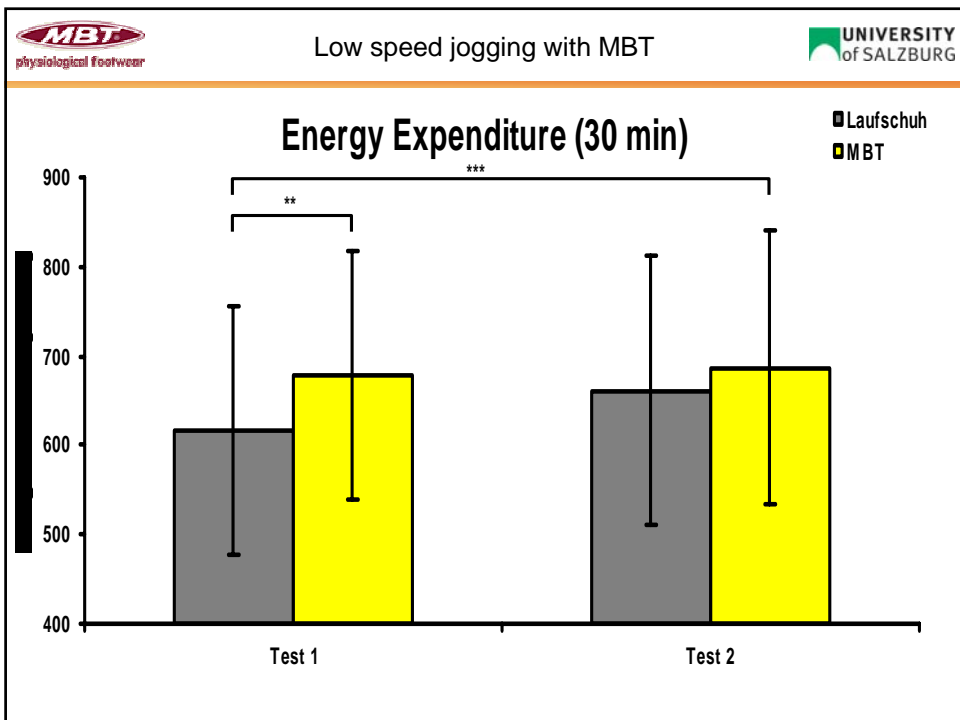
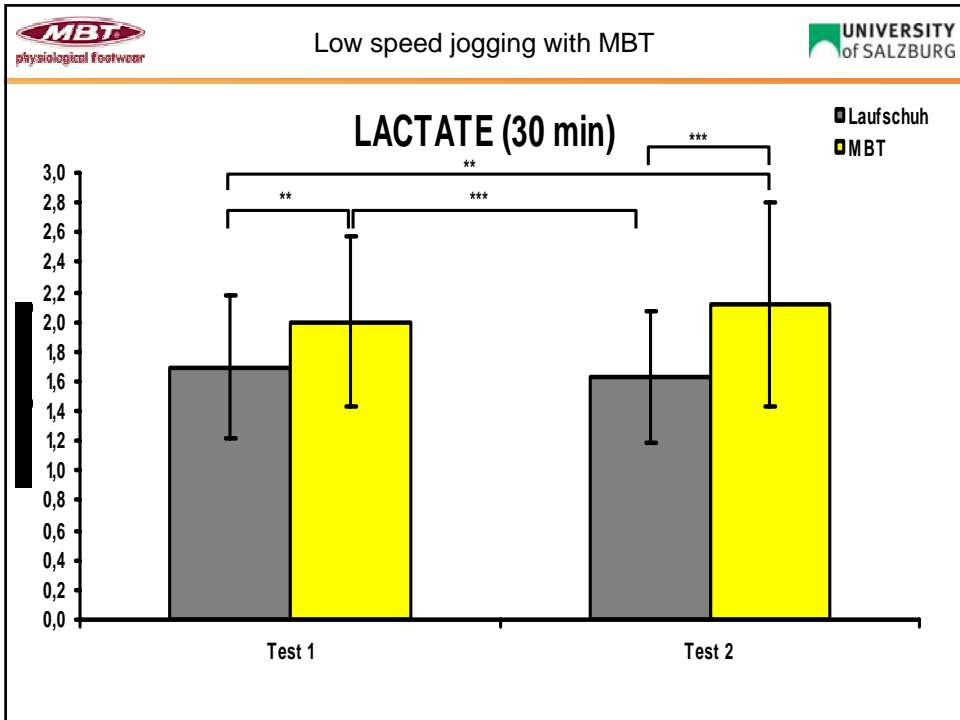
- 5 min warming up running
- Phase A: 10 min – Phase B: 10 min – Phase C: 10 min
- 5 min cool down

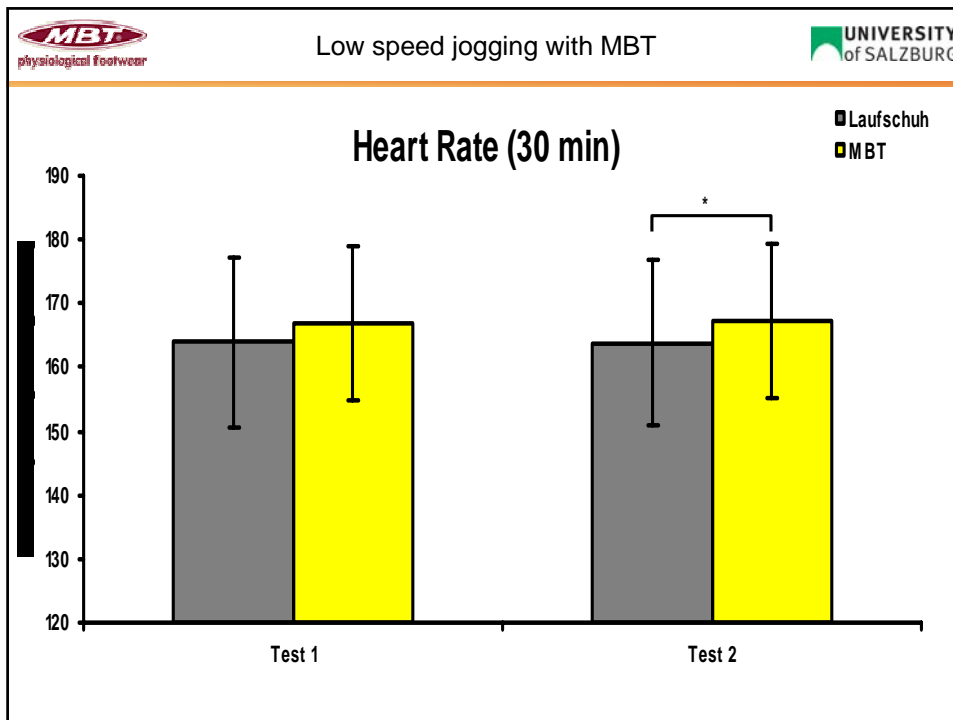
Statistics:

- Variance analysis; Post-Hoc Test (Bonferroni correction)

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MBT physiological footwear

Low speed jogging with MBT

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Summary of the results

Low speed running (2 mmol lactate threshold) with MBT results in

- sign. increase in energy demand (ca. 13%)
- sign. increase of ventilation (ca. 8%)
- sign. increase of oxygen uptake (ca. 2.6%)
- sign. increase of lactate concentration (ca. 17%)
- sign. increase of heart rate (ca. 2%)

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Speculation

Low speed running with MBT might therefore

- have a higher impact on fitness performing the same amount of training,
- have the same impact on fitness level running on a slower speed (10% ?) over the same distance
this might be helpful for people with knee and hip and LBP problems