

Effects of 8-week whole-body vibration training on the HbA1c, quality of life, physical fitness, body composition and foot health status in people with T2DM: A double-blinded randomized controlled trial

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The aim of this study was to analyze the effects of an 8-week whole-body vibration (WBV) on the quality of life, physical fitness, body composition, glycosylate hemoglobin (HbA1c), lipid profile, and foot health status in people with type II diabetes mellitus (T2DM). It was performed as a double-blinded randomized controlled trial of 90 people with T2DM. Primary care facilities were used. The 8-week WBV training consisted of maintaining a knee flexion at 45° during five to nine series of 30?60 s in a vibration frequency that oscillated between 12.5?18.5 and 30 s of recovery between series. The placebo group had to perform the same protocol but without vibration.

Participants performed the protocol three times per week. The WBV training significantly reduced the fat mass (%) of people with T2DM. However, significant effects of WBV training were not found in the quality of life, physical fitness, foot health status, lipid profile, blood pressure, fasting blood glucose, or HbA1c. Nevertheless, within groups enhances were found in HbA1c, blood pressure, fasting blood glucose, foot health status, health-related quality of life, timed-up and go test, and chair-stand test in both WBV and placebo groups. WBV was shown to be beneficial for reducing the fat mass and lipid profile of people with T2DM. The improvements of the placebo group could be due to both the social benefits of enrolling in an intervention and the physical fitness benefits of isometric contractions. Further studies are needed to clarify the effects of WBV and to establish a

dose-response relationship in people with T2DM. © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

Fasting blood glucose

Fat mass

HbA1c

Lipid profile

TUG

Type II diabetes mellitus

WBV

hemoglobin A1c

placebo

body shape

diabetes

dose-response relationship

epidemiology

fat

glucose

health status

hemoglobin

physical activity

quality of life

training

adult

Article

body composition

chair stand test

controlled study

dose response

double blind procedure

fasting

fat mass

fitness

glucose blood level

health care facility

health status

human

intervention study

knee function

lipid fingerprinting

major clinical study

motor dysfunction assessment

muscle isometric contraction

non insulin dependent diabetes mellitus

primary medical care

prospective study

quality of life

randomized controlled trial

systolic blood pressure

therapy effect

timed up and go test

whole body vibration training