

# Hypoglycemic effect of the short-term personalized physical exercise associated with health education in the treatment of type 2 Diabetes Mellitus: A case study

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**Introduction:** Diabetes Mellitus (DM) is a disease that has multiple factors, which may be genetic in origin and / or due to lifestyle. Physical activity provides significant health benefits for people with DM, favoring increased cardiorespiratory fitness and improved endothelial function in addition to increased cardiovascular health and improved quality of life. **Objective:** to verify the effectiveness of regular physical activity, combined with short-term personalized physical exercise, in the treatment of DM2. **Methods:** Woman, 73 years old, black, illiterate, retired, lives in the Cachoeira region (BA). She is diagnosed with Systolic Arterial Hypertension (SAH) and DM2, Erysipelas. In addition, due to uncontrolled chronic hyperglycemia, she was unable to undergo cataract correction surgery. The patient underwent the protocol for each session, ranging from 2 to 3 resistance exercises, 1 calisthenic and 1 cyclic; a number of 6 to 12 repetitions, according to the resistance capacity for each load; the cyclic exercise was performed on an ergometric treadmill to avoid large elevations in BP, with 3 periods of 5 minutes and a 2-minute rest between 11 and 14. **Results:** Values varied in blood glucose, BP, HR and SpO<sub>2</sub> in the months following treatment. The analysis of variance demonstrates a significant p value ( $p < 0.05$ ) for blood glucose, indicating the control of hyperglycemia. The others did not change. When comparing the beginning and end of treatment in the variables BP, HR and SpO<sub>2</sub>, there was no difference. However, blood glucose levels are different ( $p < 0.01$ ), indicating normalization and control of DM. **Conclusion:** The results obtained in this study show that different types of physical exercise combined, associated with daily physical activity, were highly efficient in the short term in controlling chronic hyperglycemia in the patient with DM2 studied.