

Reduction of body mass and change in body composition of the participants of the PoZdro! – Programme for Prevention of Diabetes and Civilisation Diseases by Medicover Foundation – preliminary results, after the first year of interventions.

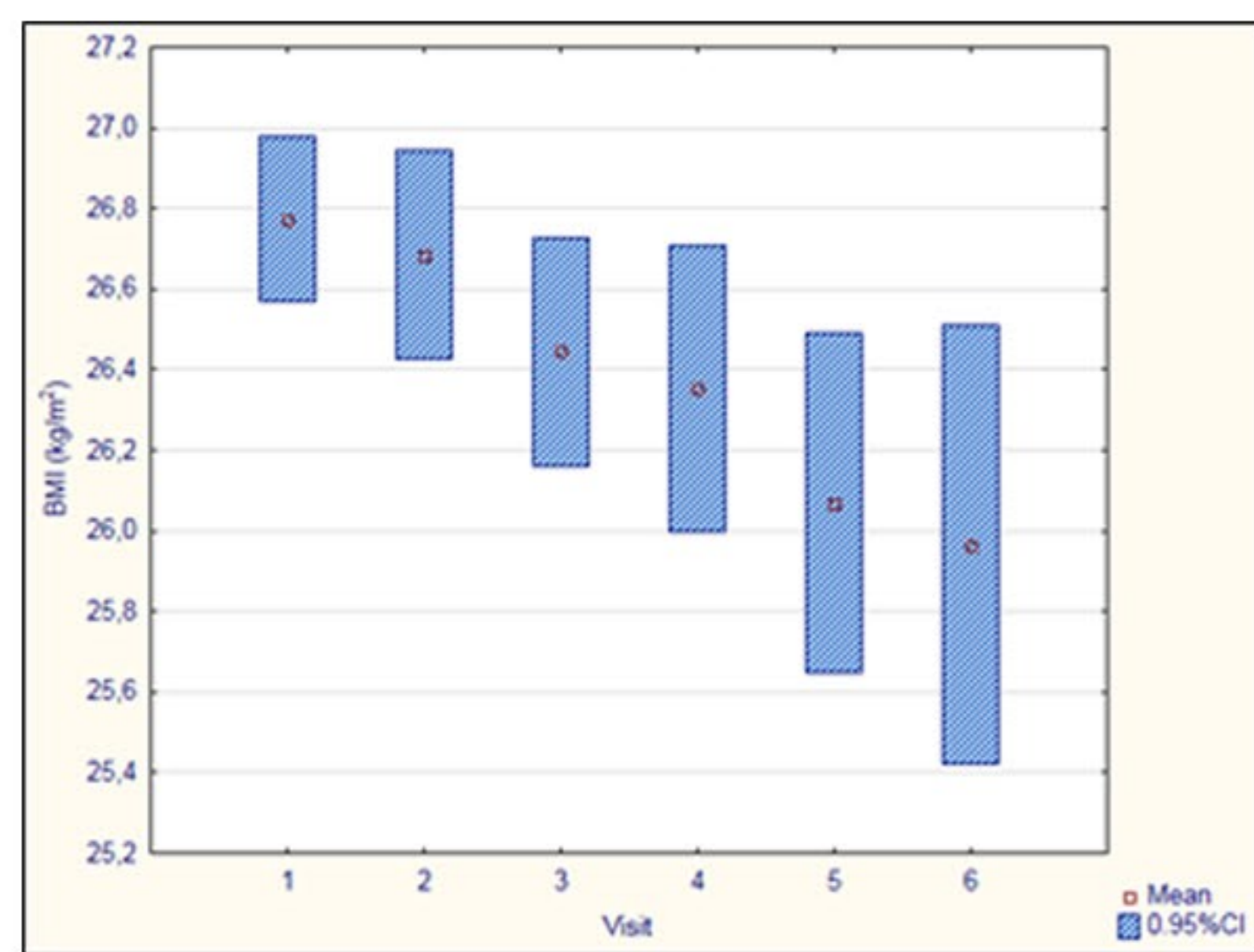
Background: Lifestyle interventions are considered to be the basic tool for treating obesity in youth. They prevent civilisation diseases such as diabetes, atherosclerosis and arterial hypertension. Globally, there are many programmes, including regular meetings with dietitians, exercise specialists, and others. Results are promising, although there is no consensus regarding one model of recommended diet, the intensity of exercise and the frequency of interventions. It is necessary to analyse the effectiveness of various programmes in order to determine a standard for children and adolescents being diagnosed as overweight or obese.

Objective and hypotheses: Assessment of preliminary results of "PoZdro!". Analysis of factors affecting reduction of body mass and change in body composition in programme participants.

Method: 870 adolescents, with excessive body mass (BMI ≥ 90 pc), age $13,8 \pm 0,7$ years, 388(44,6%) girls, 482(55,4%) boys, were included in a two-year programme of lifestyle interventions. During the first year six interventions were realised, at six-week intervals at the beginning, and at later at three-month intervals. An intervention included a 20-minute meeting with physician, dietician, exercise specialist, and psychologist; and a healthy diet, especially reduction of simple carbohydrates and regular exercises of moderate intensity. Laboratory tests (OGTT, HOMA-IR, lipid parameters, ALT) were performed at the beginning. Anthropometric parameters (height, mass, WHR, body composition) were evaluated during each intervention.

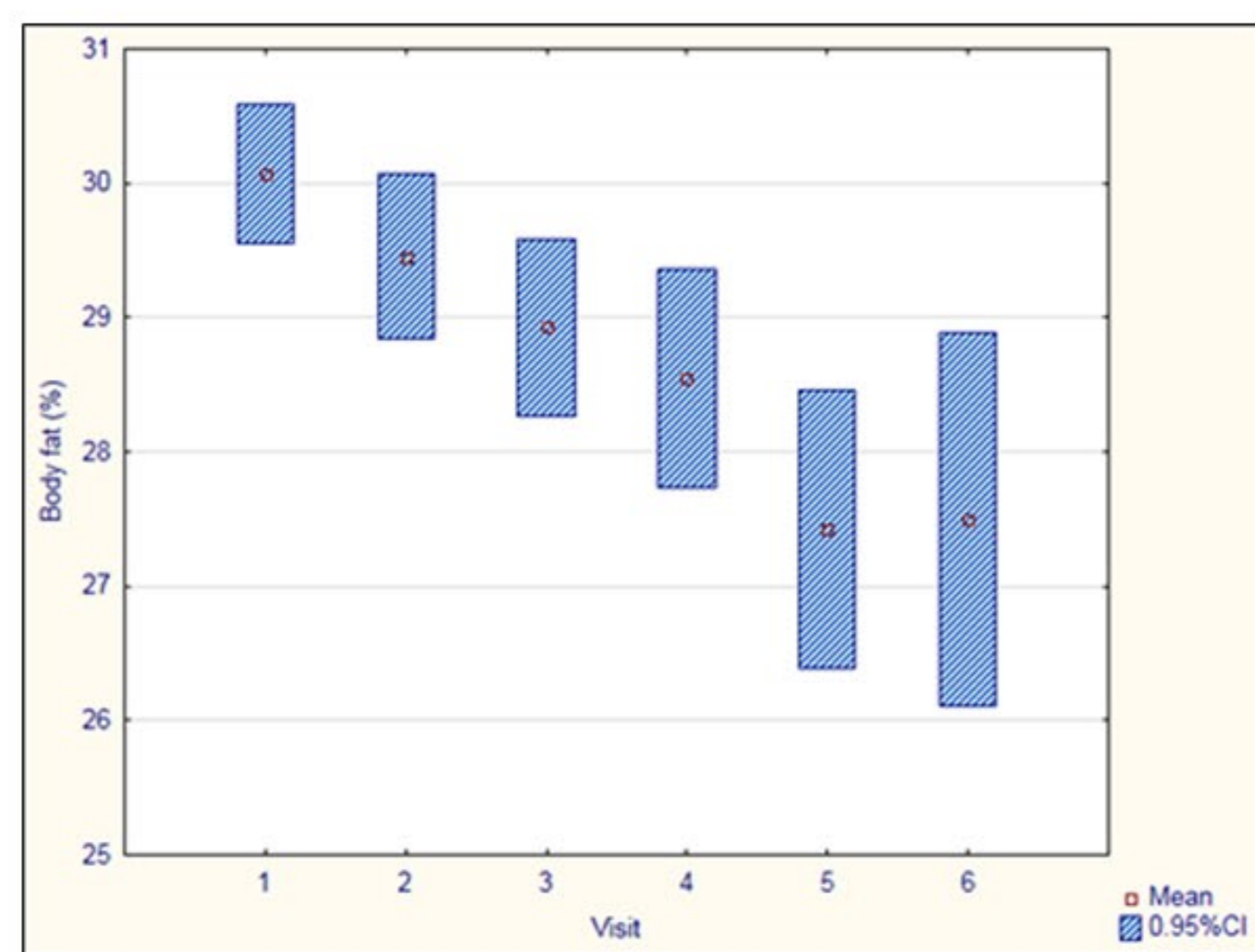
Results: 870 participants started the programme; 125(14,4%) have already had six interventions. Significant decrease in BMI and WHR was observed at each visit, as well as change in body composition – reduction of the body fat percentage (BFM[%]), absolute body fat mass (BFM[kg]), increase in muscle mass (MM[kg]).

Fig. 1: Change in BMI during one year of interventions

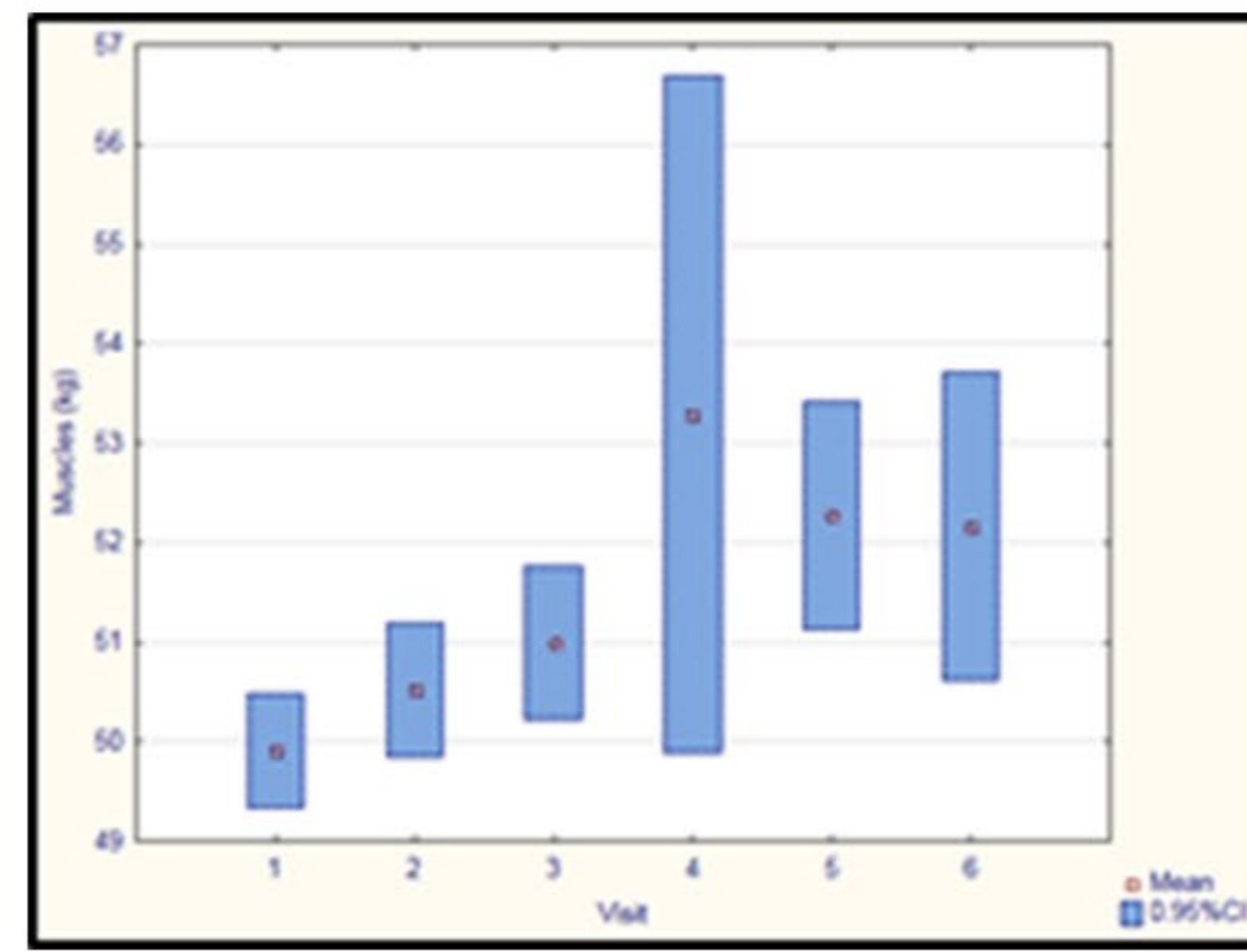


BMI dropped from $26,77 \pm 3,06$ to $25,97 \pm 3,06$ at six visit. WHR decreased from $0,96 \pm 2,49$ to $0,87 \pm 0,07$.

Fig. 2 a, b, Change in body composition during one year of intervention

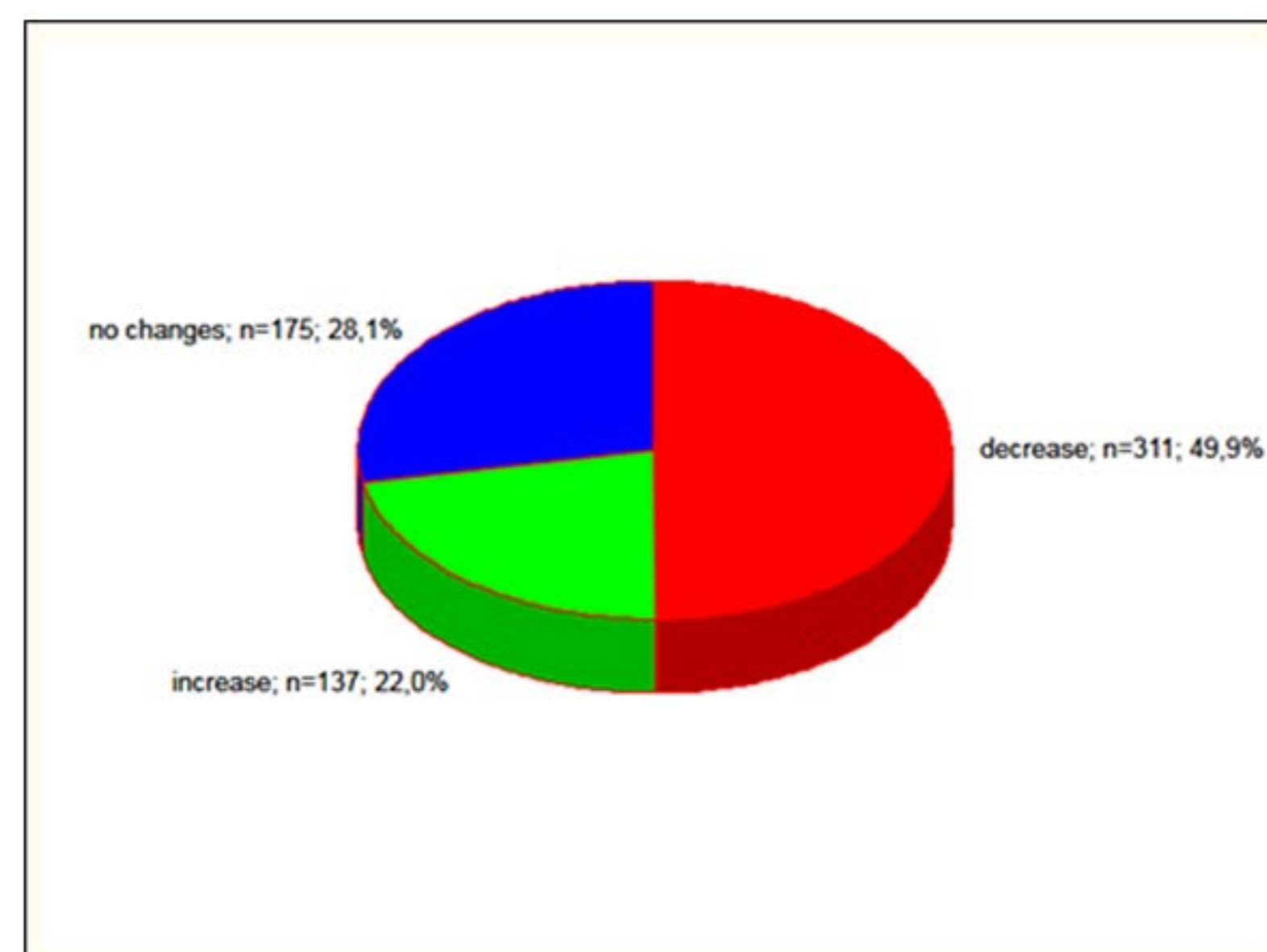


b) MM [kg]



Reduction in BFM[%] from $30,07 \pm 7,67$ to $27,5 \pm 7,84$ and BFM[kg] from $22,79 \pm 7,75$ to $21 \pm 7,15$; increase in MM[kg] from $49,9$ to $52,16 \pm 8,71$ were stated.

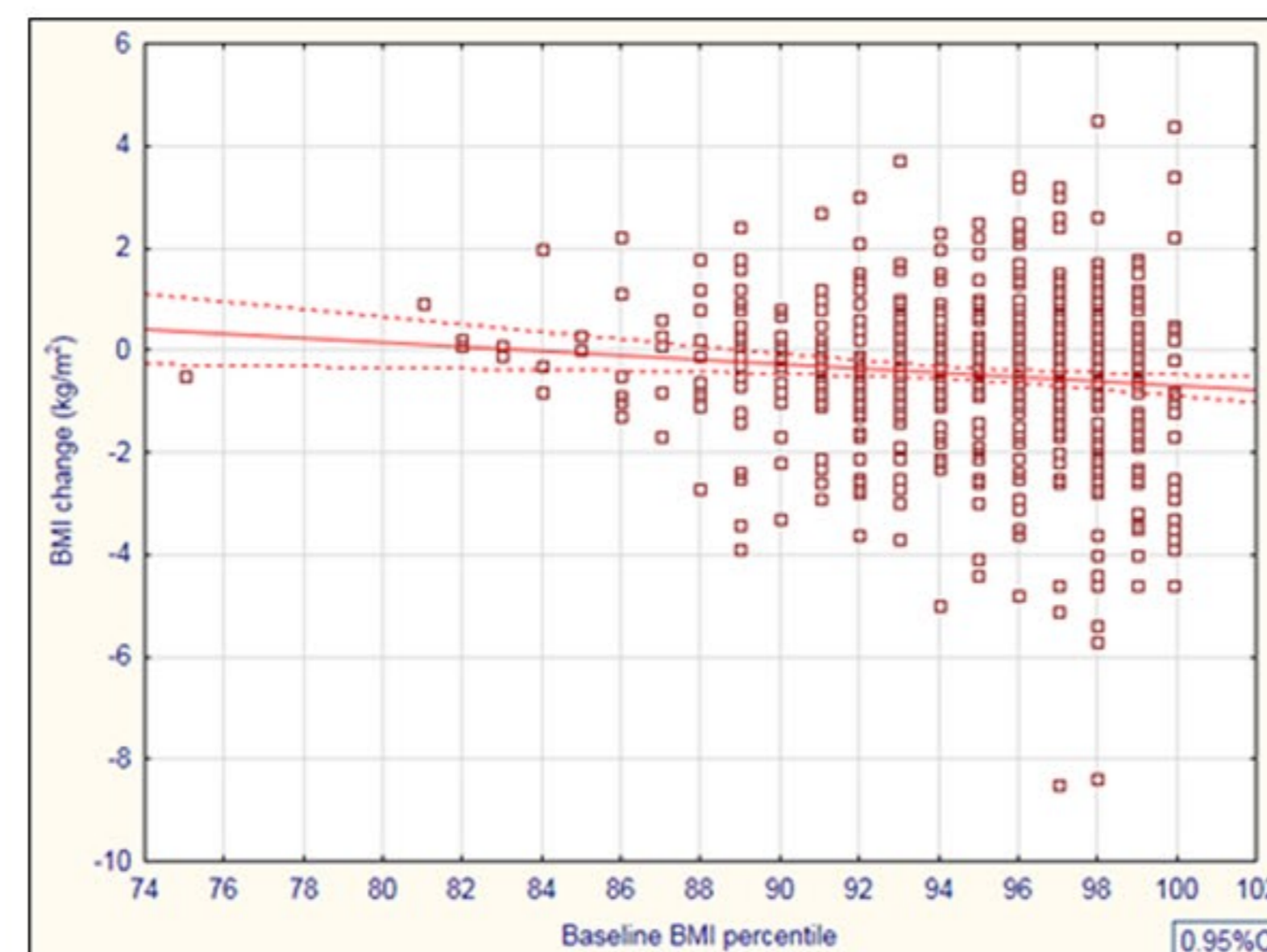
Fig. 4: Change in BMI at the last visit [No, % participants]



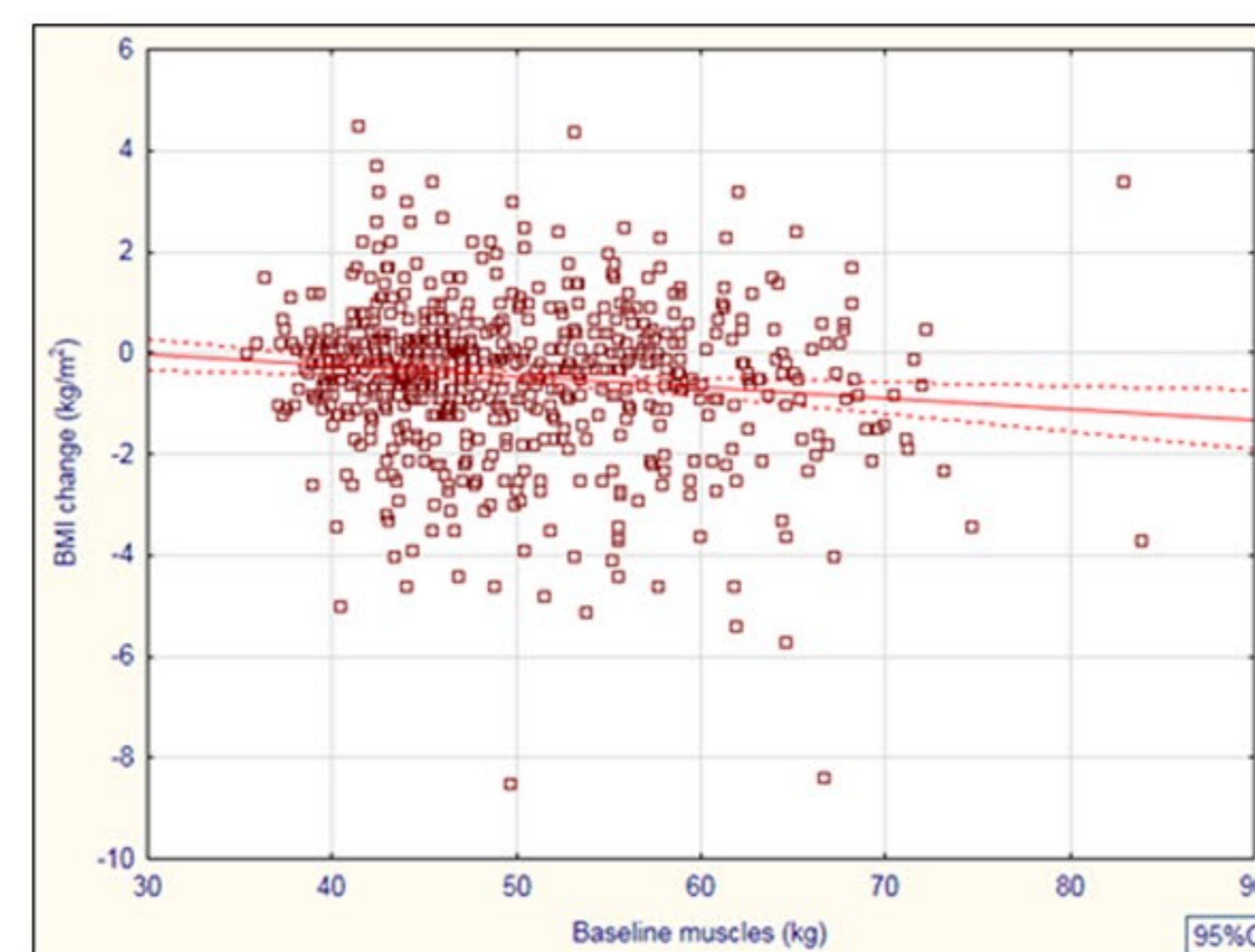
Change in BMI correlated with baseline anthropometric parameters.

Fig. 5 a, b:

a) Correlation between change In BMI and baseline pcBMI



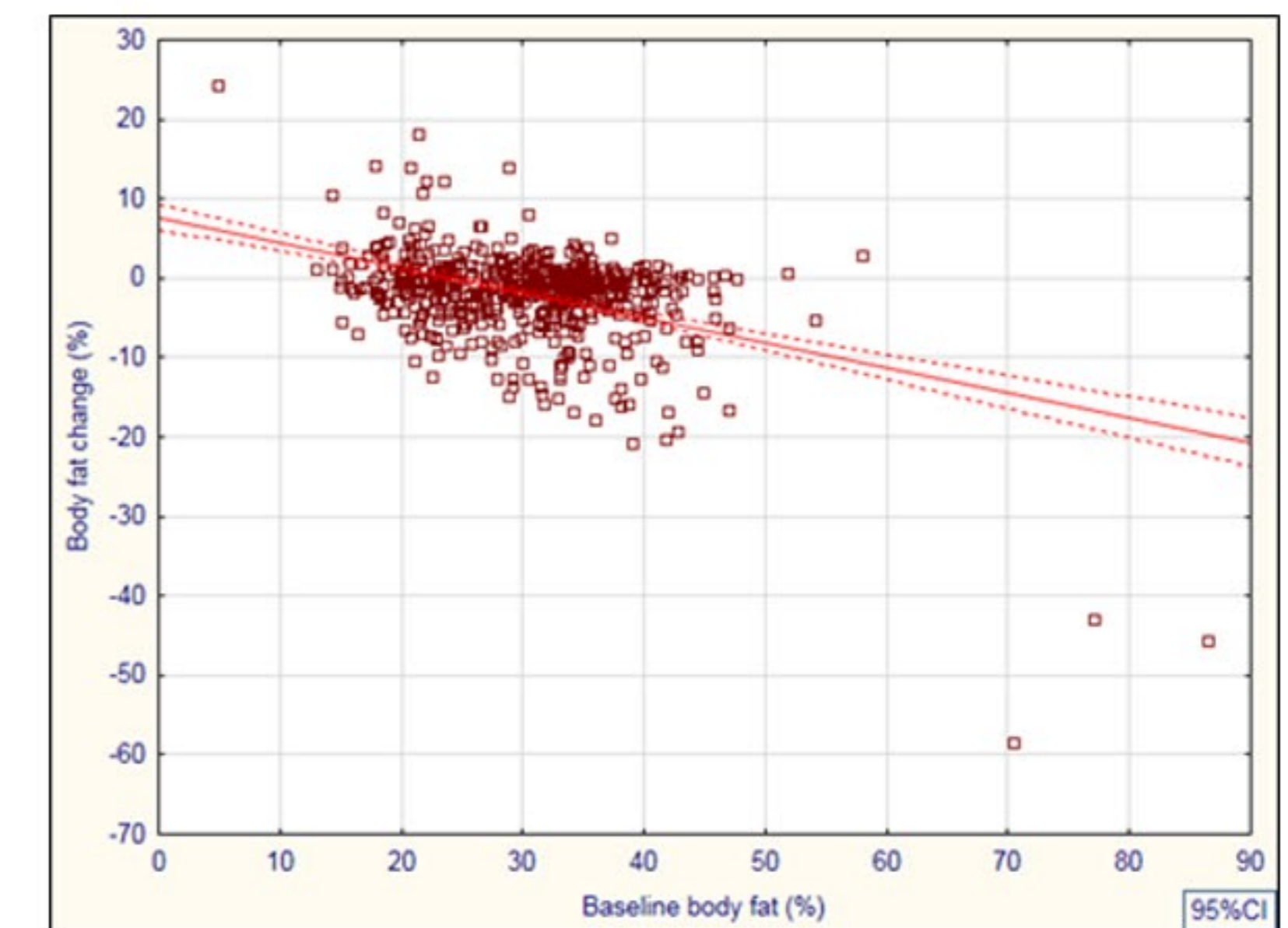
b) Correlation between change In BMI and baseline MM [kg]



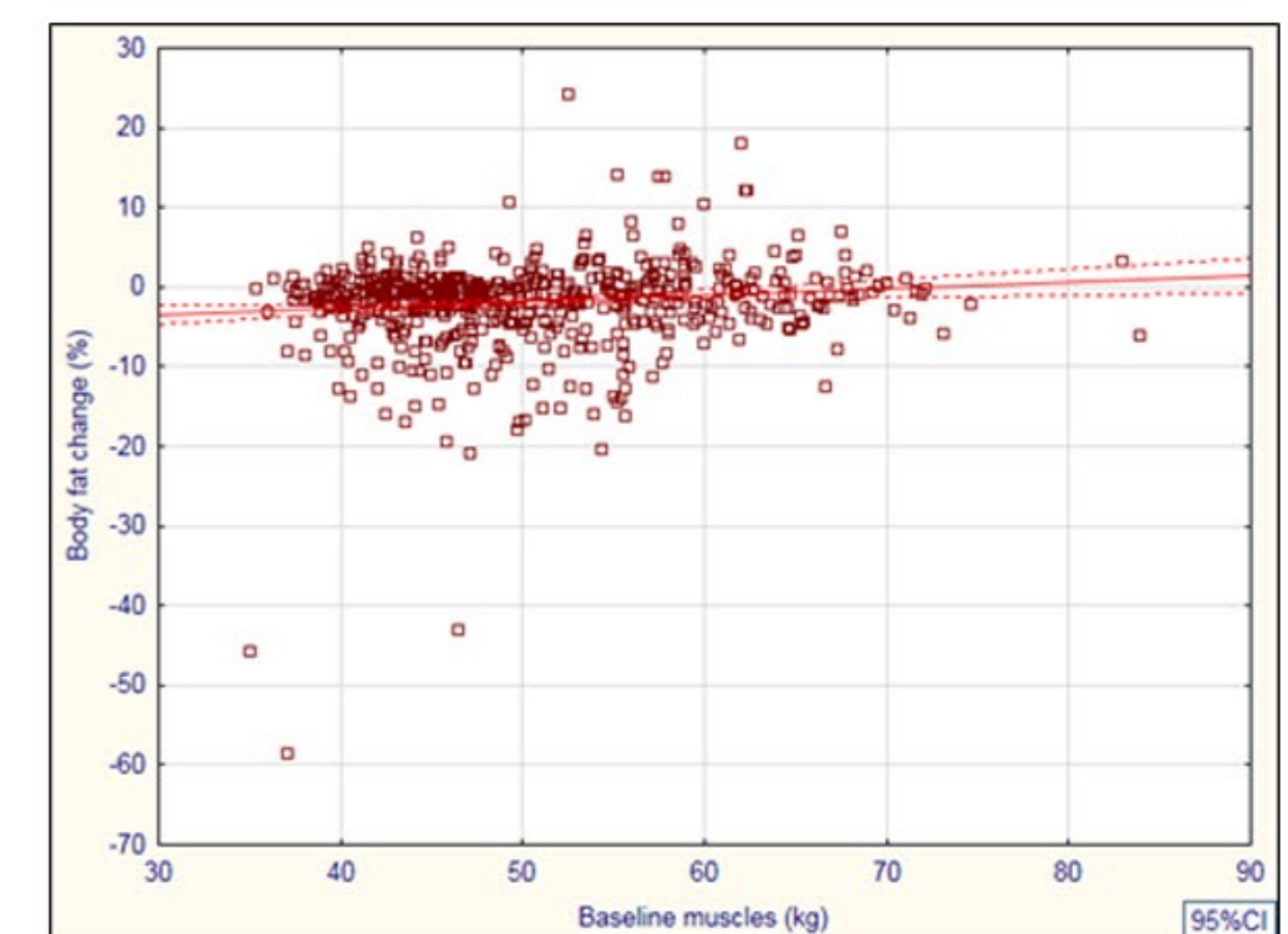
Change in BMI correlated inversely with baseline pcBMI ($r=-0.102, p=0.011$) and baseline MM[kg] ($r=-0.116, p=0.004$). Improvement in body composition correlated with baseline BFM and MM

Fig 6 a) b)

a) Correlation between change in BFM[%] and baseline BFM[%]



b) Correlation between change in BFM[%] and baseline MM[kg]



Change in BFM[%] was correlated inversely with the baseline BFM[%] ($r=-0.262, p<0.001$) and positively correlated with baseline MM[kg] ($r=0.081, p<0.001$).

Change in MM[kg] was correlated positively with baseline WHR ($r=0.120, p=0.003$) and BFM[%] ($r=0.156, p<0.001$).

Conclusion: The PoZdro! programme resulted in a significant reduction of BMI and WHR and an improvement in body composition. Participants with higher baseline BMI and MM[kg] achieved a greater decrease in BMI. Changes in body composition were greater in more obese adolescents.

