



**Case report:** unhealthy weight loss  
**Medical field:** nutritional medicine

## 1 Patient data



Age: 37 years  
 Gender: female  
 Height: 5.77 ft

Initial weight: 322.76 lbs  
 Initial BMI: 47.30 kg/m<sup>2</sup>  
 Final weight: 277.12 lbs  
 Final BMI: 40.60 kg/m<sup>2</sup>

## 2 Medical history / diagnosis

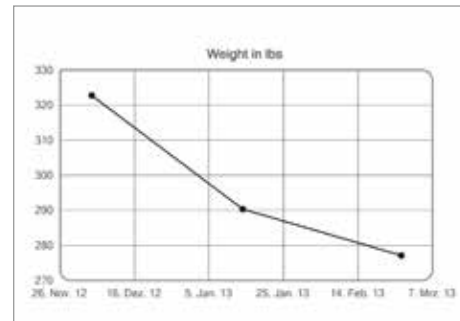
A 37 year-old woman with type 2 diabetes and severe overweight (BMI 47.30 kg/m<sup>2</sup>) has elevated glycohemoglobin (HbA1c) values: 9.50 %. In the course of a routine diabetic clinic examination, the patient is advised to increase her physical activity while simultaneously changing her eating habits, with the aim of normalizing her HbA1c value by these means.

## 3 Graphs of measuring results

### Weight

The patient lost over 44.09 lbs in just under 2.5 months.

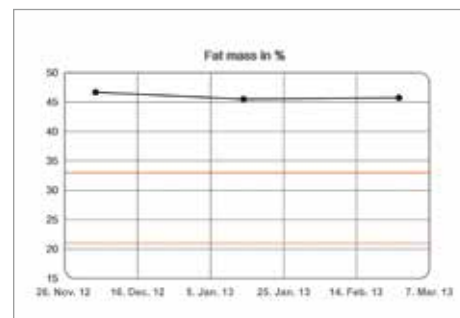
- December 4, 2012: 322.76 lbs
- January 14, 2013: 290.35 lbs
- February 26, 2013: 277.12 lbs



### Fat mass

However, percentage fat mass dropped only slightly overall, even increasing slightly between January and the end of February.

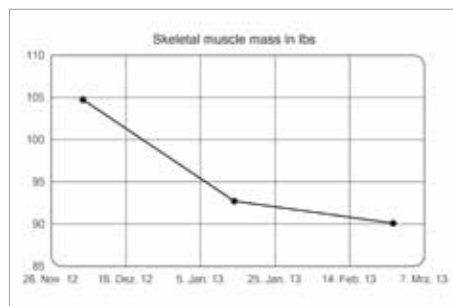
- December 4, 2012: 46.70 %
- January 14, 2013: 45.50 %
- February 26, 2013: 45.70 %



### Skeletal muscle mass

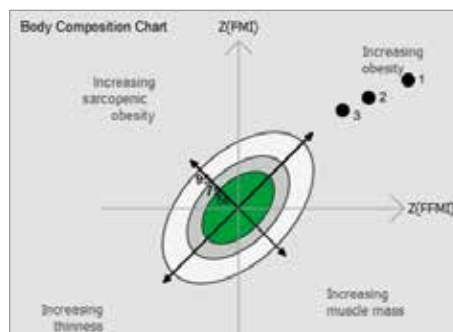
Muscle mass, on the other hand, dropped considerably. In the course of the weight loss, muscle mass decreased by 14.55 lbs, which accounts for just under a third of the total weight loss of 44.09 lbs.

- December 4, 2012: 104.72 lbs
- January 14, 2013: 92.82 lbs
- February 26, 2013: 90.17 lbs



### Body composition chart (BCC)

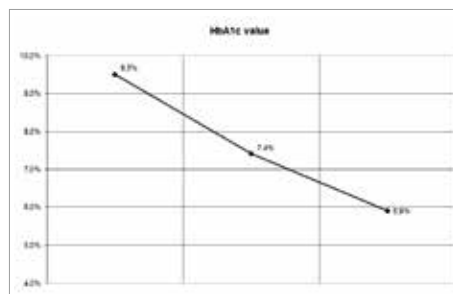
The BCC clearly shows that it was not possible to improve body composition over time and that the weight loss has to be considered unhealthy. The measuring points move more to the left (reduction in FFM) in the direction of low muscle mass instead of downwards (reduction in FM).



### HbA1c value

It was possible to reduce the HbA1c value over the period. The weight loss appears to have had a positive impact on this value.

- December 4, 2012: 9.50 %
- January 14, 2013: 7.40 %
- February 26, 2013: 5.90 %



## 4 Summary

The therapy objective was achieved by reducing the HbA1c value.

Measurement of body composition with the seca mBCA, however, shows that weight loss was too quick and must be classified as unhealthy due to the considerable loss in muscle mass. The reduced basal metabolic rate associated with this presents a risk of weight being regained rapidly (yo-yo effect). The seca mBCA is thus the ideal monitoring tool for discovering such irregularities in cases where therapy appears to have been successful.

The information gained from this example is that the focus of the therapy objective has to be extended beyond the HbA1c value. For continued treatment, the issue of maintaining muscle mass, i.e. increased activity, needs to be addressed in addition to changing eating habits.

**Measuring body composition over the course of time with the seca mBCA allows an unhealthy weight loss to be discovered; this needs correcting with appropriate measures as treatment continues.**