



**Case report:** injury and rehabilitation  
**Medical field:** sports medicine

## 1 Patient data



Age: 26 years  
Gender: male  
Height: 1.82 m

Initial weight: 85.00 kg  
Initial BMI: 25.71 kg/m<sup>2</sup>  
Final weight: 84.20 kg  
Final BMI: 25.42 kg/m<sup>2</sup>

## 2 Medical history / diagnosis

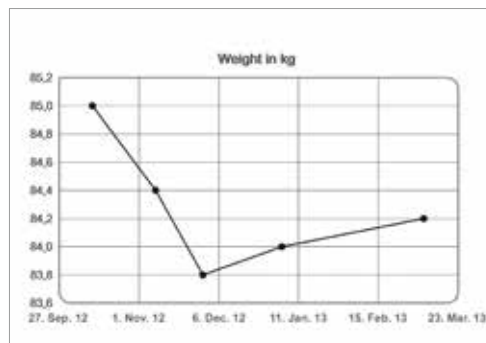
A 26 year-old professional footballer ruptured his Achilles tendon during a cup match. Following initial medical examinations, conservative rehabilitation with several weeks' rest was specified due to the severity of the injury. Subsequent physiotherapy and recovery training was monitored using the seca mBCA at regular intervals.

## 3 Graphs of measuring results

### Weight

Weight did not change significantly during the total injury break of 5 months.

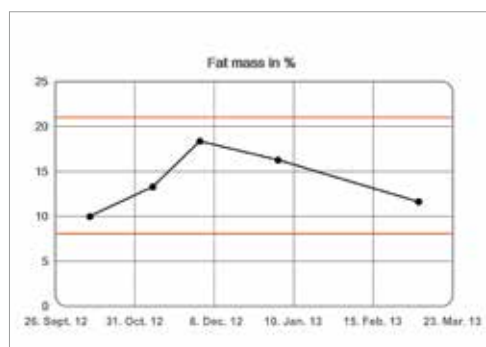
- Measurement 1 (Week 1): 85.15 kg
- Measurement 2 (Week 5): 84.40 kg
- Measurement 3 (Week 8): 83.80 kg
- Measurement 4 (Week 13): 84.05 kg
- Measurement 5 (Week 22): 84.20 kg



### Fat mass

The athlete's relative fat mass increased in the course of the training-free period and by the end of therapy, is approaching its initial level.

- Measurement 1 (Week 1): 10.30 %
- Measurement 2 (Week 5): 12.70 %
- Measurement 3 (Week 8): 17.60 %
- Measurement 4 (Week 13): 16.40 %
- Measurement 5 (Week 22): 12.40 %

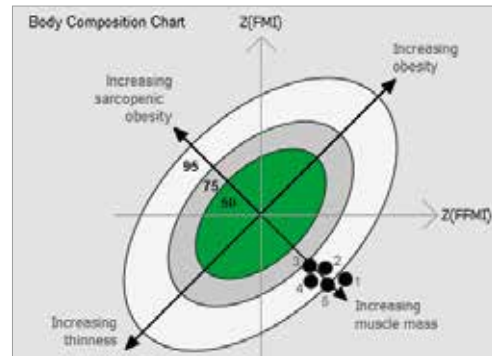


### Body composition chart (BCC)

The BCC provides an ideal check on progress as body composition changes. Decisions on further treatment were made on the basis of this. The five measurements show developments over a period of 21 weeks:

The **first measurement** was taken directly after the injury in the course of the initial examinations. **The second measuring point** was recorded after 4 weeks, the **third measuring point** after a total of 7 weeks. An almost complete break was taken during this time, with only a few physiotherapy measures instigated. Due to the severely restricted training frequency the muscle mass decreased (measuring points move to the left) and fat mass slightly increased. Following this phase of rest, a comparatively long one for well looked-after sportsmen, specific recovery training was initiated. In the course of the next 5 weeks (**measuring point 4**) it was possible to reduce fat mass (displacement downwards) and build up muscle mass (displacement to the right).

In the final phase, the load and volume of training were continuously increased: running training, training with the ball, reintegration to team training. The **fifth measuring point** was recorded after another 9 weeks. The player played his first match (substitution) following the injury after over 5 months. His body composition at this point was virtually at the same level as it was before the injury.



## 4 Summary

Despite weight being virtually unchanged, measurement with the seca mBCA clearly shows that fat mass increases in the course of the initial injury lay-off while muscle mass decreased. The changes more or less cancel one another out. As treatment continued, it was possible to monitor and occasionally also adapt the rehabilitation measures specified. It was possible to manage recovery training specifically by means of valid assessment of body composition.

**The graph measurements of the seca mBCA help to monitor the effectiveness of specified physiotherapy measures and allow these to be adapted as time goes on in order to get the player back to competitive fitness.**

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