

# 1080 MAP as a measure of joint mobility in a patient with bilateral hip resurfacing

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## Introduction

One reason why athletes and patients come to training and rehabilitation is to increase physical performance. Any functional performance is dependent upon the interaction of the mobility of different joints and regions. Joint mobility is traditionally tested joint-by-joint and plane-by-plane in open kinematic chains. This may be one of the reasons why current methods of joint mobility testing fail to correlate with functional movement patterns (Moreside & McGill, 2012) and performance (McGill, Andersen, & Horne, 2012).

As a response to this lack relationship to performance Athletic 1080 has developed a whole body mobility screen. 1080 Movement Assessment Profile (1080 MAP) is based upon the unique combination of upper extremity reaches in different directions that are measured in centimeters and degrees. The ability to perform the different reaches is dependent upon the combination of specific joint mobilities. Consequently, the results and analysis of different tests will give information about restricted or normal mobility of different joints and regions (Eriksrud, 2013).

The purpose of this case study is to use 1080 MAP movement screen as a measure of mobility and to determine what joint(s) that should be targeted by a mobility intervention.

## Subject description

AC is a 55-year-old female with a history of bilateral hip arthrosis. She underwent bilateral hip resurfacing in May 2011. She underwent traditional physical therapy after surgery with limited functional outcomes. She presented to physical therapy and training with decreased mobility and pain with functional performance (tennis). Her major goal was to return to tennis and compete in national and international tournaments.

## Examination

1080 MAP was performed bilaterally. Profiles standing on both the left and right foot (Figure 1) at initial visit is presented below. A total 1080 MAP score of 4.4 with 4.7 and 4.2 left and right respectively.

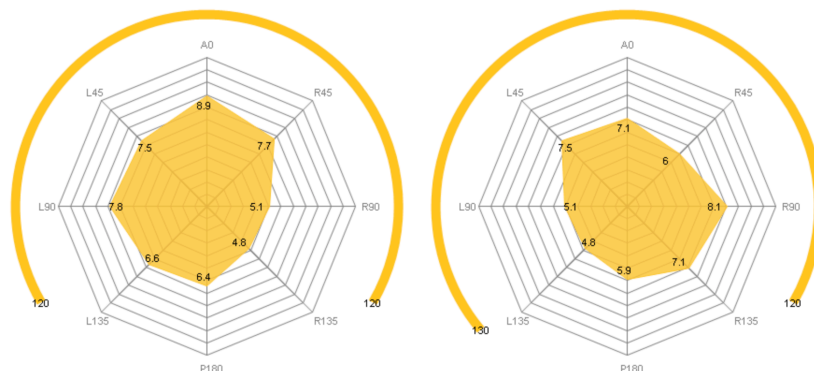


Figure 1: 1080 MAP initial visit

These profiles were evaluated and the right hip was found to be more limited. Specifically, a limitation of extension in combination with primarily internal rotation and secondary external rotation were observed. Flexion and flexion with internal rotation was also found to be restricted. Similar patterns were observed bilaterally.

Performance: AC was at the time of the initial visit unable to rotate enough for a double-handed backhand, unable to sidestep/run sideways to the right (forehand side), and difficulty running forward to approach the net for a volley.

### Intervention

Flexibility, stability and strength training was implemented with a focus on the hips and the motions identified as limited in the examination. All exercises focused on the hips being integrated with the rest of the body. Focus of the first 6 months was on mobility with stability. Specifically, the progression mobility and stability exercises were performed from all four to standing positions. Soft tissue and joint mobilizations were done in the early phase by an experienced physiotherapist. Strength exercises were then progressed from squats and lunges to push and pull exercises in 1080 Quantum. Supervised training was performed a total of 20 times.

### Outcome

The same 1080 MAP profile was then performed after 6 months. Now the 1080 MAP score was 5.1 with a score of 5.3 and 5.0 left and right respectively. This is an overall increase of 15.9%, with an increase of 21.4% on the right side.

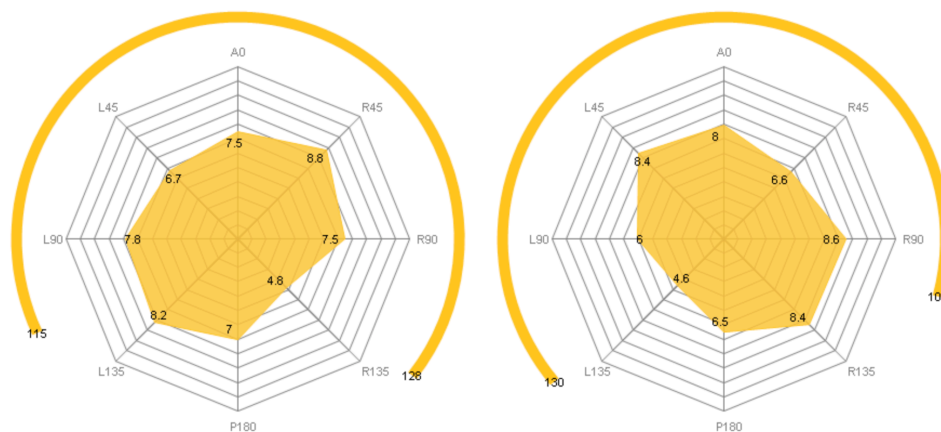


Figure 2: 1080 MAP After 12 months

Patient was after 6 months able to play tennis again. Now she is able to play tennis without pain and participate in tennis tournaments. She has won both national and international tournaments and is currently ranked no 1 in Sweden and her world ranking is 9 in her age group. AC reports more energy in her game with a better reach for different shots, and she dares to use available power to get good ball velocity. She knows how to prepare for tournaments in terms of training, warm-up, and allow for necessary restitution. However most importantly, is that AC now for the first time is able to play over a longer period without injuries.

### Discussion

1080 MAP shows an increased area after training. However there are tests showing a lower performance on both the left and right leg. Regardless, the overall area is increased and is more symmetrical in nature. This is an indication that AC has a better ability to reach and utilize her three-dimensional space. However, there is still a need to continue to work on hip internal rotation and extension based upon here current profile.

### References

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