

# Case Study

## Conditioning a Division I Basketball Player



### Athlete Overview

Melissa is a Division I women's basketball player. She entered the program the summer prior to her senior season. She is a very strong, fit athlete with a good work ethic. Melissa has trained extensively at a high level, but feels she is not always in good shape for basketball. Melissa was able to utilize the Woodway ELG treadmill, iMett testing equipment, and the EXSpeed™ high speed treadmill training program to her advantage.

### Athlete Needs

As discussed, Melissa has a long, extensive training background consisting of strength training, lateral speed and agility training, and conditioning. Much of her past training consisted of aerobic track workouts of repeat 400 meter runs and timed runs of 1½ miles. She enters the program very aerobically fit, but has difficulty playing fast-paced basketball games for long durations. Improving basketball specific conditioning and speed are her main concerns. She hopes to become faster and more fluid during all movements and play at a very intense level of for an entire game.

### Program

The ELG treadmill, iMett metabolic testing unit, and EXSpeed™ training programs offer the perfect blend of training to meet this athlete's needs. Melissa enrolled in an eight week training program consisting of 3 workouts per week. Her initial evaluation showed that strength was not a concern but her speed was sub-par and her Anaerobic Threshold (AT)/Max Heart Rate (HR) ratio was very poor, showing a lack of the Anaerobic fitness that is important for speed and power sports. Her initial AT HR was 144 with a Max HR of 176, showing a ratio of 81% (average consisting of 88%+).

Melissa was placed in a program which included the EXSpeed™ treadmill sessions, ground based sprint workouts, plyometric and agility workouts, functional strength training, flexibility training, and core stabilization.

The EXSpeed™ sessions included multiple runs at various speeds and elevations (running up-hill) to improve power output, stride frequency, running mechanics, knee drive, core stability, and lactic acid tolerance to improve conditioning. Melissa's speeds, intensities and volumes were prescribed based on her testing results and she was allowed to recover to 82% of the AT HR between runs to achieve the needed training stimulus.

### Training Results

After 8 weeks of training, Melissa showed impressive results. Her speed improved as shown by her 40 yd dash time, but more impressively, her AT/Max HR ratio improved to 85% while her 2 min. recovery/AT went from 70% to 67%, demonstrating improved recovery times between sprints. She competed successfully in her senior season while continuing to shift her training from aerobic to anaerobic conditioning and more explosive lifting techniques. After 13 months of continued training and another 8 week EXSpeed™ program, her testing results shot up to an AT/Max HR ratio of 94%, putting her in the excellent category for Anaerobic capacity. Melissa achieved her hope of sprinting at high levels of intensity for long durations without fatigue. Not only did she become better conditioned for basketball, but became faster at the same time.



#### At a Glance:

##### Athlete:

- Division I Women's Basketball player
- Strong & Aerobically fit

##### Goals:

- Improve Sprint Speed
- Improve Conditioning
- Play at high level during senior season without fatiguing

##### Initial Evaluation:

- 40 yd Dash: 6.27 sec.
- AT/Max HR Ratio: 81%
- 2 min. Recovery/AT HR Ratio: 70%

##### Training Plan:

- EXSpeed™ Treadmill Program
- Ground Based Sprint Workouts
- Modify Strength work to become more explosive

##### Training Equipment:

- Woodway ELG Treadmill
- iMett Metabolic Testing Unit

##### Eight Week Results:

- 40 yd Dash: 6.23 sec.
- AT/Max HR Ratio: 85%
- 2 min. Recovery/AT HR Ratio: 67%

##### Thirteen Month Results:

- 40 yd Dash: 6.16 sec.
- AT Max HR Ratio: 94%
- 2 min. Recovery/AT HR Ratio: 71%
- Successful Senior Season
- Training for European Women's League