

Krzysztof Kaliszewski

MSc in Physical Education
Master Class Track and Field
Coach



Athletes coached

- Anita Włodarczyk 81.08m
- Kamila Skolimowska 76.83m
- Malwina Sobierajska 67.38m
- Szymon Ziółkowski 83.38m
- Paweł Fajdek 83.91m
- Wojciech Kondratowicz 81.35m

A photograph of Anita Włodarczyk, a Polish hammer thrower, sitting on the wooden bleachers of a large stadium. She is wearing a grey zip-up hoodie with a small logo on the chest, black athletic pants, and bright blue and red sneakers. She is holding a hammer throw implement, which consists of a metal head with a yellow ball and a chain. She is smiling at the camera. In the background, there is a red running track, a green field, and a city skyline with several tall buildings under a cloudy sky.

A look at
Anita Włodarczyk's
training.

Differences between woman and
men in hammer throwing.

Berlin 2009

- WR 77,96m



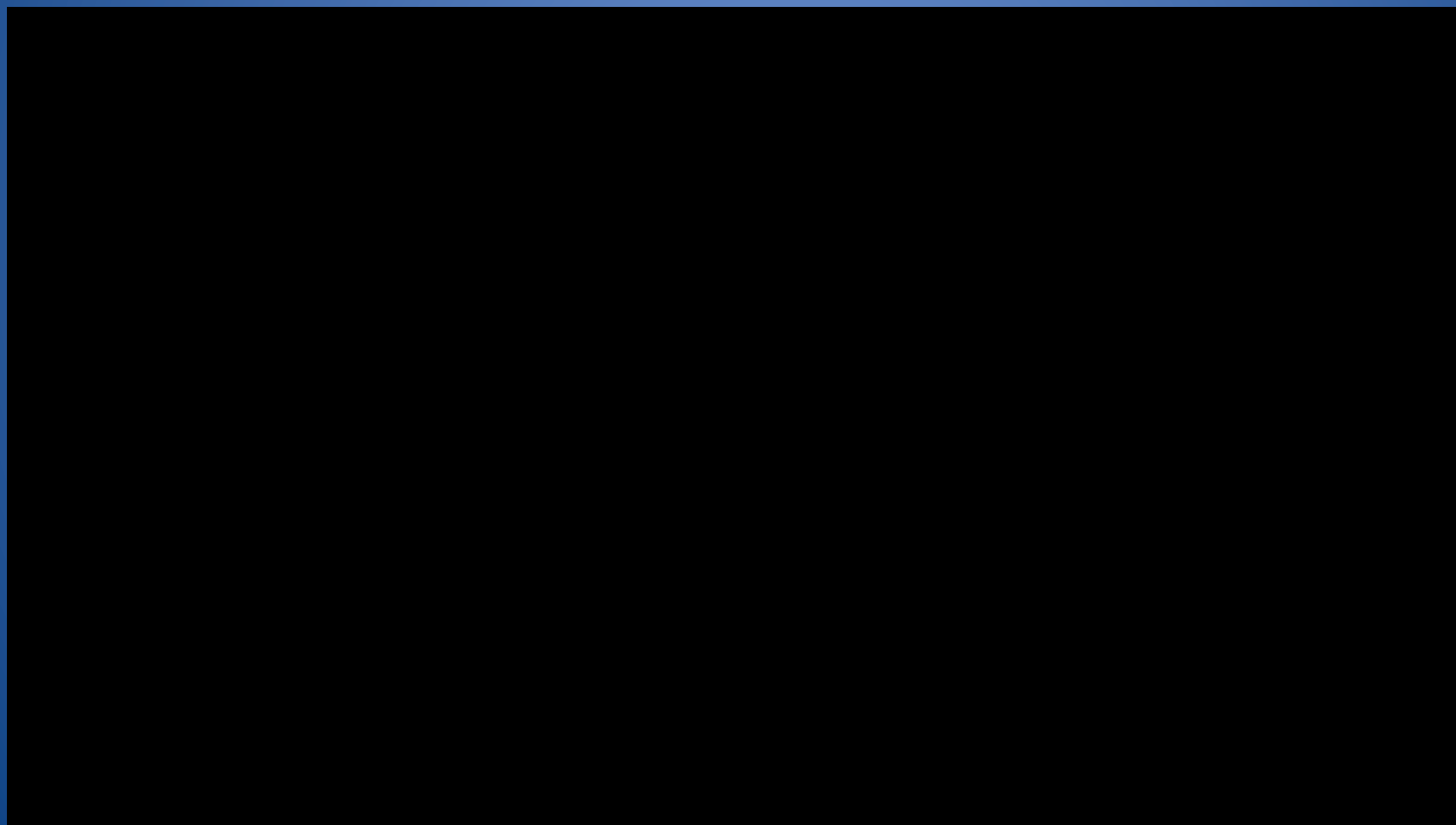
Bydgoszcz 2010

- WR 78,30m



Berlin 2014

- WR 79,58m



Wrocław 2015

- 79,83m WR outside the stadium



Cetniewo

- WR 81,08m



Beijing 2015

- Other 80s



Training of Anita Włodarczyk in the preparation period 2014/2015

Major emphasis

☐ **Technique**

- Number of **technical** training sessions in a week microcycle,
- Number of throws in the preparation period 2014/2015
- Technical elements,
- Full Technical

☐ **Strength**

- Number of **strength** training sessions in a week microcycle,
- Main exercises used in strength training,
- Total load in the main exercises of the strength training, mean annual arithmetical values of resistance in individual events,

☐ **Fitness**

- Number of **fitness** training sessions in a week microcycle,
- Main exercises used in fitness training,
- Functional training

Technique



Number of technical training sessions in a week microcycle

- In a standard week microcycle, I use 5 to 6 **technical** training sessions. Below is presented a plan with division into the days of the week:
- **Monday:** light hammers, 3 or 4 kg,
- **Tuesday:** heavy hammers 5 or 6 kg and 9 kg,
- **Wednesday:** mixed hammers, 4 or 5 kg,
- **Thursday:** heavy hammers 5 or 6 kg and 9 kg,
- **Friday:** mixed hammers, 4 or 5 kg
- **Saturday:** mixed hammers 3 kg, 4 kg, 5 kg, 6 kg and 9 kg

Anita Włodarczyk

Number of throws in the preparation period 2014/2015

- 3 kg hammer. (1195 mm) 526
- 4kg hammer. (1195 mm) 1 037
- 5kg hammer. (1195 mm) 1 272
- 6kg hammer. (1195 mm) 945

Total = 3 780

- 9kg hammer. (600 mm) 2 057

Total = 5 837

Szymon Ziółkowski

Number of throws in the preparation period 2008/2009

- 5kg hammer. (1215 mm) 184
- 6kg hammer. (1215 mm) 1 172
- 7.26kg hammer. (1215 mm) 1 415
- 9kg hammer. (1215 mm) 1 546

Total = 4 317

- 15kg hammer. (600 mm) 2 381

Total = 6 698

Technical elements

Anita Włodarczyk

Performed usually without a throw, according to the below configurations, single rotations or sequences,

- Hammer (3,4,5,6 kg) – 10 000
example number of rotations for a set and configuration:
1+1, 2+2, 3+3, 5+5, 10, 10.....to exhaustion
- Gear (bar, stick, rod, dumbbells) – 12 000
example number of rotations for a set and configuration:
1+1, 5+5, 10

Multiple rotations with hammer 1+1



Multiple rotations with hammer X 10



Full technique



Multiple rotations with hammer X 10



Multiple rotations 2+2



Multiple rotations - 5



Slow motion throw



Technical elements

Szymon Ziółkowski

Performed usually without a throw, according to the below configurations, single rotations or sequences,

- Hammer (6; 7,26 ; 9kg) – 3 500
example number of rotations for a set and configuration:
1+1+2+2+3+3, 5+5, 10, 10.....to exhaustion
- Gear (bar, stick, rod, dumbbells) – 8 000
example number of rotations for a set and configuration: 1+1, 5+5, 10

Multiple rotations with gear(eg. bar) on the shoulders x 10



Multiple rotations with gear on the buttocks x 10



Multiple rotations with gear held in front of the body x 10



Multiple rotations in the opposite direction



Multiple single rotations 1+1



Multiple rotations with hammer X 10



Full technique



Multiple rotations 1+3+throw



and others



Multiple rotations, start without arm swing



Multiple rotations, start without arm swing



Kama's last days...



Multiple rotations 1+3+throw



Strength



Number of strength conditioning training sessions in a week microcycle

- In a standard week microcycle, I use 3 **strength** training sessions. Below is presented a plan with division into the days of the week and exercises:

Monday: Snatch/Clean, Full Squat,
Bench press,

Wednesday: Deadlift, Full Squat, Twists,

Friday: Clean, Full Squat/Half Squat, Lounges

Main exercises in strength training

- Snatch
- Clean and jerk
- Lift
- Full Squat
- Half Squat
- Bench press
- Lounges
- Twists

Total load for the main exercises

Anita Włodarczyk 2014/2015

- Clean **181 536 kg**
mean weight **75.64** kg (mean repetitions: 30 /workout X 80 workouts)
- Full squat **362 973 kg**
mean weight **93.07** kg (mean repetitions: 32.5 /workout X 120 workouts)
- Deadlift **106 224 kg**
mean weight **88.52** kg (mean repetitions: 30 /workout X 40 workouts)

Total= 650 733 kg

Total load for the main exercises

Szymon Ziółkowski 2008/2009

- Clean **295 200 kg**
mean weight **123 kg** (mean repetitions: 30 /workout X 80 workouts)
- Full squat **662 400 kg**
mean weight **184 kg** (mean repetitions: 30 /workout X 120 workouts)
- Deadlift **183 600 kg**
mean weight **153 kg** (mean repetitions: 30 /workout X 40 workouts)

Total= 1 141 200 kg

Fitness



Number of fitness training sessions in a week microcycle

- In a standard week microcycle, I use 3 **fitness** training sessions. Below is presented a plan with division into the days of the week and exercises:

Tuesday: Jogging, A-skips and C-skips, Vertical Jumps
All-Round Throws, Flexibility Drills, Sprints,

Thursday: Functional training,

Saturday: Jogging, A-skips and C-skips, Vertical Jumps
All-Round Throws, Flexibility Drills, Sprints,

Main exercises used in fitness training

- Jogging
- Sprints (40m, 100m,)
- Functional exercises



Hurdle drills





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All-Round Throws (backward, forward, vertical)



A-skip



C-skip



Vertical jumps



Functional Training

- Functional training supports the training process through strengthening deep muscles, helps athletes become less prone to injuries and equalizes the postural defects through regaining symmetry. FMS is a key test before starting the training to evaluate whether an athlete is capable of being involved in sport.

Test FMS



FUNCTIONALMOVEMENT.COM

WHAT IS FMS?

The Functional Movement Screen is an innovative system used to evaluate movement pattern quality for clients and athletes.

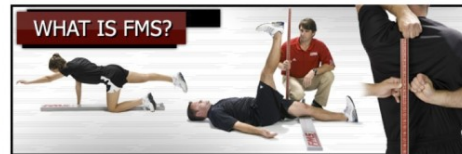
The screen is comprised of seven fundamental movement patterns that require a balance of mobility and stability and place the individual in extreme positions where weaknesses and imbalances become noticeable.

BENEFITS

- A consistent and reliable testing method
- Easily identifies movement limitations and dysfunction
- Improves efficiency, durability, and performance
- Provides an enhanced foundation for exercise and performance programming

GET MOVING!

To learn more about Functional Movement Systems or for information on getting certified please visit FunctionalMovement.com!



WHAT IS FMS?

THE 7 TESTS

OF THE

FUNCTIONAL MOVEMENT SCREEN

LEARN WHETHER YOU SHOULD TRAIN OR CORRECT EACH MOVEMENT PATTERN.



Deep Squat
(Functional Movement)

- Assess bilateral, symmetrical and functional mobility of the hips, knees, and ankles.



Hurdle Step
(Functional Movement)

- Assess the bilateral functional mobility and stability of the hips, knees, and ankles.



In-Line Lunge
(Functional Movement)

- Assess torso, shoulder, hip and ankle mobility and stability, quadriceps flexibility and knee stability.



Shoulder Mobility
(Fundamental Mobility)

- Assess bilateral shoulder range of motion, combining internal rotation with adduction and external rotation with abduction.



Active Straight Leg Raise
(Fundamental Mobility)

- Assess active hamstring and gastroc-soleus flexibility while maintaining a stable pelvis and active extension of opposite leg.



Trunk Stability Push Up
(Fundamental Core Strength)

- Assess trunk stability in the sagittal plane while a symmetrical upper-extremity motion is performed.



Rotary Stability
(Fundamental Core Stability)

- Assess multi-plane trunk stability during a combined upper and lower extremity motion.

The fundamental role of the functional training is:

- Correcting fitness and functional defects diagnosed in the FMS test
- Maintaining the level of fitness and function at a high level.
- Stabilization of the vertebral column and pelvis
- Prevention



Functional Training



Differences between woman and men in hammer throwing

Women are increasingly often involved in the areas of physical activities which, until recently, were only the realm of men. These tendencies are especially noticeable in the professional sport, where few sports and event are practised only by men.

(Trzaskoma, Trzaskoma, Warsaw 2001)

Differences in training

- Women's and Men's

- Mass and length of equipment
- Entry into the first rotation
- Feeling the equipment (hammer)
- Load in strength training
- Physiological cross-section of the muscles
- Fat tissue percentage

Differences in training

- Women's

- Upper limb muscles
- Menstrual cycle
- Anterior pelvic tilt

Mass and length of the equipment (hammer)

Women

- M3 kg hammer. (1195 mm) 25%<
- 4kg hammer. (1195 mm) 100%
- 5kg hammer. (1195 mm) 25%>
- 6kg hammer. (1195 mm) 50%>
- 9kg hammer. (600 mm) 125%>

Men

- 5kg hammer. (1215 mm) 30%<
- 6kg hammer. (1215 mm) 17%<
- 7.26kg hammer. (1215 mm) 100%
- 9kg hammer. (1215 mm) 25%>
- 15kg hammer. (600 mm) 107%>

Differences in technical training

- Entry into the first rotation:
W - through the heel, M - through the toes
- Feeling of equipment (hammer:
W - relax after the 2nd rotation (throw after 4 rotations),
M - relax from the entry into the first rotation,

Load in strength training

Women

- Clean **181 536 kg**
- Full squat **362 973 kg**
- Deadlift **106 224 kg**

Total= **650 733 kg**

Men

- Clean **295 200 kg** 38%
- Full squat **662 400 kg** 45%
- Deadlift **183 600 kg** 42%

Total= **1 141 200 kg** 42%

difference

Physiological cross-section of muscles

women

- Structural base 32% < body mass

- Time to reach max. force >

- Number of muscle fibres <

ST and FT =

men

- Structural base 36% > body mass

- Time to reach max. force <

- Number of muscle fibres >

ST and FT =

(Trzaskoma, Trzaskoma 2001)

Fat percentage

Healthy fat percentage in women is 27%, whereas this value in men is 15% of total body weight. In elite athletes, these values are: W - 18%, M - 9%. It should be noted that the physiological minimum in human body is: W - 12%, M - 5-7% of total body weight, necessary for proper function of human body.

The above values represent recommended values for healthy human body. If this equilibrium is disturbed and the body starts storing fat for various reasons, fat tissue is accumulated in women in the thighs and hips, whereas in men - in the waist and abdomen. The excessive weight negatively affects training efficiency in both sexes, but in throwing events, the excess weight is allowed. The emphasis should be on excessive increase in fat percentage. Especially in women, this process occurs very quickly and the return to the initial state is very difficult.

Upper limb muscles

- Upper limb muscles are "the weakest link" in the total women's strength.

(Trzaskoma, Trzaskoma 2001)

- The emphasis in women's training should be on strengthening upper limb muscles; increasing muscle strength in these muscle groups guarantees proper performance of exercises (squats) and, consequently, ensures the improvement in total strength.

Menstrual cycle

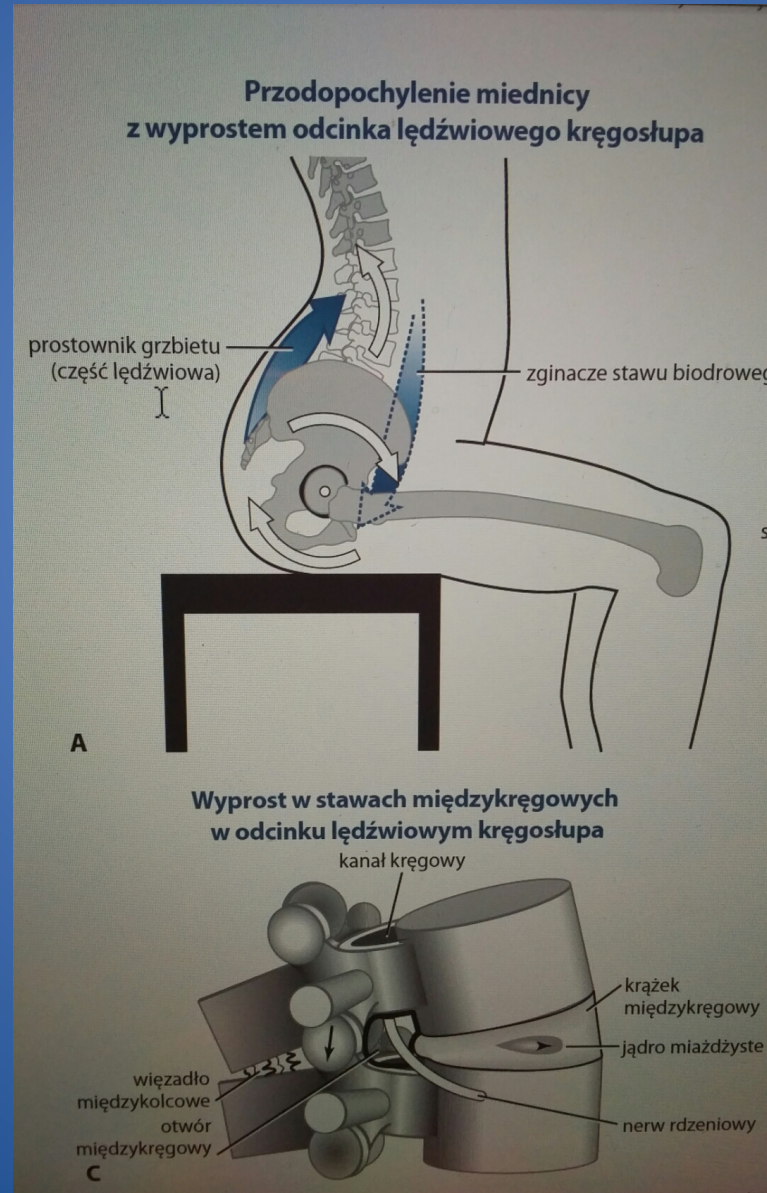
- Each coach working with female athletes has to be familiarized with the problem of the menstrual cycle. It is not necessary (and it would be a mistake) to adjust training to this cycle, but it is acceptable to give an athlete a day off on a day when the period starts, or on days before or after the period, depending on individual reactions of the athlete.
- Knowledge and awareness of these problems allow coaches to survive during those days😊, and will help them react adequately without unnecessary threats to the training process and without provoking the easily-irritated areas of the female psyche.

Anterior pelvis tilt

- Anatomical build of female body determines the natural functions women were endowed with. Lower and wider pelvis and greater femoral angle help women adapt more to pregnancy and birth rather than to sport.

It should be remembered that the weakest links in women's training are pelvis and knees and application of functional training and specific exercises to strengthen pelvic floor muscles are essential in prevention of vertebral column degeneration and limitation of injury rate among female athletes.

Anterior pelvis tilt



- Contact:

Coach Krzysztof Kaliszewski

kali33@o2.pl

Thank you very much for your
attention

