

Competencies for Throwing Javelin

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At the Scottish Athletics Conference

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Background

- o All round sportsman- Football, Hockey, Cricket, Rugby, Basketball, Tennis, Golf. Athletics at school- 200m record holder!! Javelin champion with sore elbow!
- o PE teacher – coached all sports
- o Club coach by coincidence
- o Had some talented youngsters come to the club
- o Took various coaching awards
- o North of the Thames coach/Course leader
- o Took Senior Coach Award

- o Team coach for GB juniors and U23's
- o 1998 - Mark 6th at Euros and 4th at Commonwealths (Threw 85.67m)
- o National Coach for javelin
- o Goldie broke national junior record, silver at Euro Juniors
- o Goldie qualified for 2004 Olympics
- o 2007- called out of retirement to coach Kelly Sotherton!
- o 2008- Olympics - Kelly has best javelin in championship heptathlon.

“For once javelin wasn't the event that let Kelly down!”

- o 2011 - Returned to coaching a group because of Harry Hughes
- o 2013 - Unofficial mentoring role on NCDP
- o 2014 - Returned to GB team role at World Juniors
- o 2015 - Retired after 37 years in teaching

Why Competencies?

- o Safety
- o Injury prevention
- o To create and withstand incredible forces
- o Technical efficiency
- o General and Specific Conditioning
- o Thrower development
- o Ultimate performance for an individual

Demands of the event dictate!



Top women in 2015

https://www.youtube.com/watch?v=2AuwX_fCzNI

'The Master'

<https://www.youtube.com/watch?v=XGKYIPITn6U>

Anything is possible!!

[https://www.youtube.com/watch?v=Gh3D7ib
DlpU](https://www.youtube.com/watch?v=Gh3D7ibDlpU)

So, what are the demands?

Task:

With a partner..... can you come up with what you believe a javelin thrower must have in order to perform the event?

2 minutes

List of things needed?

- o Rhythm in approach
- o Optimum forward velocity of athlete
- o Rotation whilst maintaining forward velocity
- o Timing of impulse stride
- o Internal rotation of hip
- o Heel rotation and part flexion of knee of rear leg
- o Sudden braking effect of block of lead leg
- o Stretch reflex before strike
- o Speed of release (maximal velocity)
- o Recovery to prevent fouling the throw

- o Stability in key positions*
- o Co-ordination of body parts to create effective technique(kinetic chain)*
- o Elasticity, mobility and flexibility*
- o Power and explosiveness*
- o Strength(general and specific)*
- o Resilience in joints, muscles and connective tissues*

A complete athlete?

<https://www.youtube.com/watch?v=xrxX-XD1yY4>

The Key Competencies

1. Coordination and Balance
2. Endurance
3. Rhythm and movement patterns
4. Mobility, Flexibility, Elasticity
5. General and Core Strength
6. Specific Strength
7. Power and Explosiveness
8. Speed
9. Excellent technical model
10. Mental attitude

Coordination and Balance

- o Walking exercises
- o Balancing on toes, heels, single leg
- o Skipping, foot patterns, sprint holds, sprint/hurdles drills
- o Jump turns
- o Lunges
- o Hopping, hopping and hold(Eyes closed?)
- o Single leg squat ($1/4$, $1/2$ at increasing pace)
- o Handstands
- o Press up with arm raised/ leg raised
- o Cart wheels
- o Forward/backward rolls
- o Along a bench/bench
- o Using weight hold positions out of normal range

Endurance

- o A level of endurance is required in order that a javelin thrower may carry out the volume and variety of training components to be able to perform the event at an optimum level.
- o This will be particularly necessary in the preparation phases of the yearly cycle and may need topping up until the competition phase.
- o In order to make sufficient performance gains in a range of training, strength endurance will be a requirement (e.g. Circuit training, weight training)

Rhythm and patterns

- o Easy running – forwards and backwards
- o Side to side
- o Crossovers
- o Hopping side on, lead to crossovers
- o ‘Grapevine’
- o ‘Zelesny’ foot drills
- o Hurdles drills with side on skills

Work at rhythm and patterns!!!

Watch Goldie's throw!!

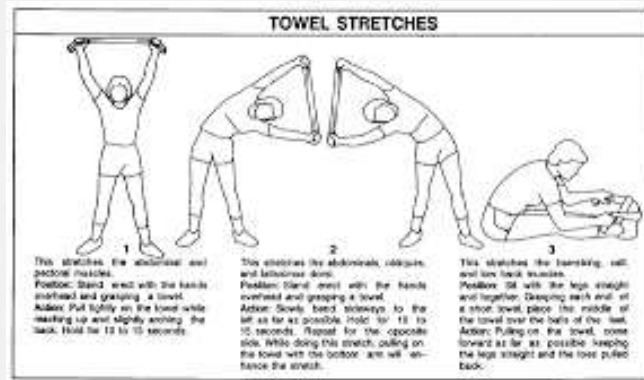
[https://www.youtube.com/watch?v=uoPpsue
DtnA](https://www.youtube.com/watch?v=uoPpsueDtnA)

Mobility, flexibility, elasticity

- Flexibility is defined as the range of motion of your joints or the ability of your joints to move freely. It also refers to the mobility of your muscles, which allows for more movement around the joints. Range of motion is the distance and direction your joints can move, while mobility is the ability to move without restriction.
- Inadequate flexibility can affect your athletic performance by preventing you from reaching the full potential, strength and power of your muscles.



Band/towel stretches



Stretches for javelin

Advanced exercises(Select with care for developing athletes)

<https://www.youtube.com/watch?v=wkvl59J22B0>

General and core strength

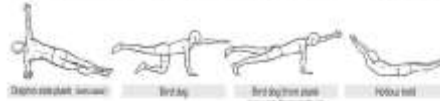
- o Circuit training(huge variation)
- o Basic Olympic lifts and supplementary weights exercises
- o Weight machine training exercises
- o Swissball exercises
- o Static holds(plank etc)
- o Yoga/Palates
- o Medball holds and basic exercises
- o Gymnastic routines/ ropes/rings/parallel bars
- o Swimming activities
- o Hurdles activities

Use variety in training

<https://www.youtube.com/watch?v=9kQDb52IFNg>

Bodyline Drills

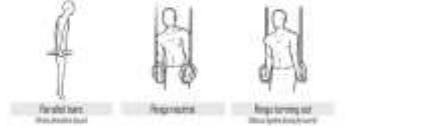
(Go for a blood rack, then build up to 10sec)



Skill Work

Support holds

12 min including rest time



L-Sit Progressions

10 min including rest time



Handstand

24 min including rest time

Pushing Exercises

3 series (2 rep/series)
20 min rest between series



Gymnastics is amazing!

<https://www.youtube.com/watch?v=Wt4d4tC-CF7s>

The opportunities are endless

https://www.youtube.com/watch?v=8csBphcf_cDo

Specific Strength

- Developing event specific strength is important for any sporting event. Event specific strength is strength that the athlete can actually apply to their event. That is, strength developed through the actual ranges of motion and at the specific joint angles and speeds that are used when performing the event.
- This differs from general strength, which is strength of the prime movers without regard to the range of motion, joint angle, or speed that may occur in the actual event.

Exercises

- o Running sideways with different emphases
- o Overhead throwing from side on and front on
- o Overhead chopping and side on chopping exercises
- o Core bag exercises
- o Gymnastics
- o Weight training that emphasizes the sequencing of the event
- o Plyometric exercises that assist the leg drive and blocking effect
- o Hip strike exercises(some with arm left behind)
- o Medicine ball exercises that emphasize explosiveness sequencing of the event
- o 'Out of range' resistant exercises
- o Lunge exercises
- o Torso, shoulder, hip and ankle rotational exercises
- o Band work

Power and Explosiveness

- o In general, power for the overhead thrower is primarily generated with leg extension, hip rotation and trunk flexion
- o The arm is more related to speed and therefore the javelin thrower should concentrate on effective power from the bottom upwards to create the forces that allow for the maximal speed of the shoulder , arm and hand

Power and Explosiveness

- o Olympic lifts
 - o Cleans/Hang Cleans and High Pulls
 - o Snatch/Hang Snatch and Snatch Pull
 - o Jerks
- o Pullovers
- o Bench Press
- o Rear neck press
- o Squats/Squat jumps
- o Uphill running
- o Plyometrics/Bounding/Box jumps
- o Sled pulling
- o Medicine ball throws
- o Shot throws – OH Back/ OH Forward/ UH Forward

Range of training opportunities

<https://www.youtube.com/watch?v=oOSD0nC6Qp0>

Benchmark testing

o Power

- o Back Squat 1Rep Max(RM), 5 RM - To 90 degrees
- o Front Squat 1 RM, 5 RM
- o Power Clean 1 RM
- o Hang Cleans 5 RM
- o Snatch 1RM
- o Hang Snatch 5RM
- o Bent Arm Pullover 1RM, 5RM
- o Bench Press 1RM, 5RM
- o Jerks 1 RM

Benchmark testing

- o Explosive power
 - o Standing Long jump
 - o 3 Bunnies
 - o 5 alternate leg bounds
 - o Shot Overhead Back Full weight, lighter weight
 - o Overhead Forward Full weight, lighter weight
 - o Underhand Forward Full weight, lighter weight

Speed

- o Throwing
 - o Final strides into final rear/front foot plant
 - o Heel and hip rotation
 - o Reaction from stretch reflex
 - o Final arm strike
- o Underweight implements – javelins, balls, golf balls, Finnflieger, medicine balls, shot
- o Lighter weights
- o Sprinting, crossovers, downhill running

Speed /strength relationship

- o Increased speed developed in the approach of the javelin throw places a considerably greater load on the athlete's legs (when they hit the final plant). This creates an even greater need for leg strength in this event. Strength development will enable the athlete to better overcome these loads so that they can proceed into the throwing motion with more velocity.

Excellent technical model

- o In *throwing, running, bounding, weight training, mobility, flexibility etc.*
- o From day 1!!!
- o Unlearning is much harder than learning!!
- o Influences longevity as well as performance
- o Needs time to develop
- o Physical competencies have huge influence on technique

Mental attitude

- o Train as an athlete first... javelin second
- o Respect your coach and other athletes
- o Think at least medium term but focus on what you need TODAY!
- o Appreciate structure in your programme
- o Separate skill learning and competitiveness
- o Practice event management(No excuses!)
- o Don't over react
- o Learn to succeed and how to lose

Conclusions

Coaches should plan to assist javelin throwers to:

- o be a complete rounded athlete able to compete at their optimum level
- o train as required for each stage of development
- o have a great attitude to learning
- o think for themselves
- o understand their event
- o contribute to their development stages
- o maintain a healthy body and mind(robust!)
- o minimise injuries
- o stay in the sport and maintain motivation

- o Maximise (Optimal)
 - ✓ Physical competencies
 - ✓ Technical competencies
 - ✓ Mental competencies
 - ✓ Emotional competencies
 - ✓ Learning opportunities

Useful links

- o Javelin: A Comprehensive Training Programme
<https://prezi.com/b1axbbo5fcr/javelin-a-comprehensive-training-program/>
- o Complete Book of Throws (Jay Silvester) preview
<https://books.google.co.uk/books?id=J9M4dfg3HDsC&pg=PA37&lpg=PA37&dq=javelin+conditioning&source=bl&ots=iz3FuRfZ6r&sig=1gzd0mxhz8fvHxSqH0tuBeELfcU&hl=en&sa=X&ved=OCFkQ6AEwCWoVChMIsaDTx5uxyAIVAIUCh0A4AZC#v=onepage&q=javelin%20conditioning&f=false>
- o Q&A On Javelin Conditioning With Wilf Paish By Wilf Paish
<http://www.coachkrall.com/Articles/Jav/WilfParish.htm>
- o Strength training: how to construct a progressive weight training plan
<http://www.pponline.co.uk/encyc/strength-training-how-to-construct-a-progressive-weight-training-plan-41340>
- o [Javelin Exercises - Type this into google and look at 'Images'](#)

Youtube

- o https://www.youtube.com/watch?v=fDg5J3Ui_YM Finnish
- o https://www.youtube.com/watch?v=EM_IGPfGld8 Estonian
- o <https://www.youtube.com/watch?v=Wr4d4tCCF7s> Swedish
- o https://www.youtube.com/watch?v=er_bHWm4p0Y Russian
- o https://www.youtube.com/watch?v=2G8QfvU_Lgc Czech
- o <https://www.youtube.com/watch?v=Ntqjx1rWwqE> British(Steve Backley)
- o <https://www.youtube.com/watch?v=c09spKAet8M> German
- o <https://www.youtube.com/watch?v=83TeiM64YsA> Norwegian
- o https://www.youtube.com/watch?v=otDi_rqRhVw French
- o <https://www.youtube.com/watch?v=080jUyJOV-o> USA