

Kari Ihalaisten
National Coach, javelin throw
Finnish Athletics

Mr. Kari Ihalaisten (born 24.07.1954) has worked as a national javelin coach for Finnish Athletics from 01.09.1990 to 31.12.2005. For the first 10 years he worked on part time basis, and since 2001 his position was for full time.

During Mr. Ihalaisten's national coaching career Finnish throwers have won 13 medals in Olympic Games, World Championships and European Championships and 31 medals in World Junior Championships and European Junior Championships.

1992-2004 Matti Närhi 88.24m Olympic finalist

Coaching USA Arizona 2006-2008

2002-2007 Esko Mikkola 84.26m Finland Olympic finalist
 2005-2008 Breau Greer 91.29m USA record & WC Osaka Bronze medal
 2000-2007 Paula Tarvainen 64.88m 6 place WC Helsinki Osaka 12 place



Kari Ihalaisten
 Javelin record 87.04m year 1983
 Discus 51.18m -83
 Hammer 56.09m -83
 Shot put 15.84m-83

FINNISH JAVELIN MEDALLISTS IN MAJOR INTERNATIONAL CHAMPIONSHIPS 1990 - 2005

Olympic Games

1992 BARCELONA (ESP) Silver Seppo Rätty 86.60
 1996 ATLANTA (USA) Gold Heli Rantanen 67.94
 Bronze Seppo Rätty 86.90

World Championships

1991 TOKIO (JPN) Gold Kimmo Kinnunen 90.82m
 Bronze Seppo Rätty 88.17m
 1993 STUTTGART (GER) Silver Kimmo Kinnunen 84.78m
 1995 GÖTEBORG (SWE) Bronze Mikaela Ingberg 65.16m
 1999 SEVILLA (ESP) Gold Aki Parviainen 89.52m
 2001 EDMONTON (CAN) Silver Aki Parviainen 91.31m

European Championships

(1+1+2 = 4)

1990 SPLIT (YUG) Gold Päivi Alafrantti 67.68m
 1994 HELSINKI (FIN) Silver Seppo Rätty 82.90m
 1998 BUDAPEST (HUN) Bronze Mikaela Ingberg 64.92m
 2002 MÜNCHEN (GER) Bronze Mikaela Ingberg 63.50m



March 2008-2011
 Kari Ihalaisten
 National Coach, javelin throw
 KOREAN ATHELETICS FEDERATION



European Championships

- 1991 U20 THESSALONIKI (GRE) Silver Jarkko Heimonen 75,00m
Bronze Aki Parviainen 74,70m
- 1993 U20 SAN SEBASTIAN (ESP) Gold Mikaela Ingberg 56,64m
Silver Matti Närhi 71,74m
- 1995 U20 NYIREGYHAZA (HUN) Gold Taina Uppa 60,72m
Silver Harri Haatainen 74,28m
- 1997 U20 LJUBLJANA (SLO) Silver Juha Aarnio 77,60m
- 1997 U23 TURKU (FIN) Gold Pietari Skyttä 81,58m
Gold Taina Uppa 56,48m
Silver Matti Närhi 80,72m
Bronze Merja Pitkänen 55,24m
- 1999 U23 GÖTEBORG (SWE) Gold Harri Haatainen 83,02m
Silver Ville Räsänen 78,36m
Bronze Veera Oksanen 55,90m
- 2001 U20 GROSSETO (ITA) Bronze Saku Kuusisto 76,98m
- 2003 U20 TAMPERE (FIN) Gold Teemu Wirkkala 79,90m
Silver Tero Järvenpää 73,66m
Bronze Antti Ruuskanen 72,87m
- 2003 U23 BYDGOSZCZ (POL) Bronze Tero Pitkämäki 78,84 m
- 2005 U23 ERFURT (GER) Silver Antti Ruuskanen 76,82m
- 2005 U20 KAUNAS (LIT) Bronze Ari Mannio 72,47m

FINN JAVELIN MEDALLISTS IN MAJOR INTERNATIONAL JUNIOR CHAMPIONSHIPS 1990-2005

World Championships

- 1990 U20 FLOIDIV (BUL) Gold Tommi Vesleri 73,88m
Bronze Jarkko Heimonen 72,30m
- 1992 U20 SOUL (KOR) Gold Aki Parviainen 75,13m
Bronze Heli Tolkkinen 60,12m
- 1994 U20 LISABON (POR) Gold Taina Uppa 59,02m
Silver Matti Närhi 74,92m
- 1996 U20 SYDNEY (AUS) Silver Harri Haatainen 75,12m
- 1999 U18 BYDGOSZCZ (POL) Silver Saku Kuusisto 76,73m
- 2001 U18 DEBRECEN (HUN) Gold Teemu Wirkkala 75,18m
Bronze Tero Järvenpää 68,85m

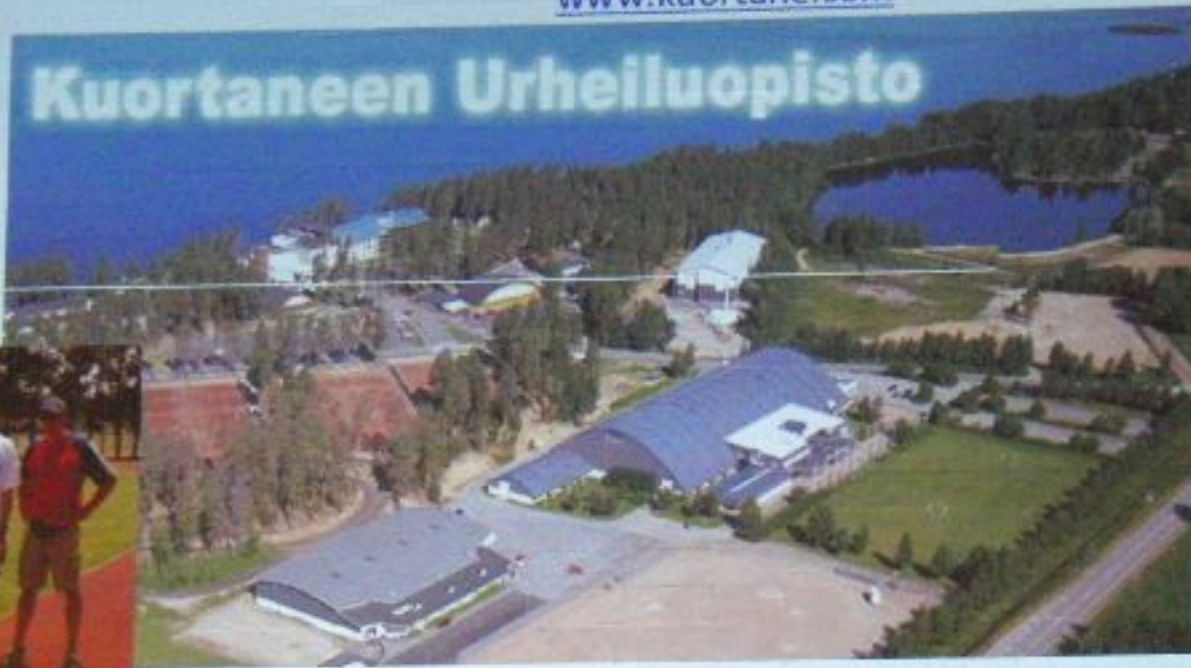




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Kuortaneen Urheiluopisto



Keihäskarnevaalit
Javelin Carnival



The Finnish Model in T&F



The training system of Finnish Track and Field Federation



Finnish Olympic Committee

Coach education

4 levels

- professional
- top coach
- specification For javelin
- club coach

Kuortane Sports Institute

TEAM FINLAND

- international top athletes
- international level athletes

Director of top athletics
Head Coach of throws

National team

National javelin coaches

Superjuniors (17-22y)

NMV; the national junior team (14-18y)

- 5 areas in Finland

Area coach (5)

Junior camps (12-14 y)

- 10 areas in Finland

Area coach (10)



Training and coaching in clubs

The Finnish Javelin Festival



Coaches

Head coaches and national coaches are hired at minimum with 50% time and half of them as a full time. For example in throws we have full time head coach, javelin coach, hammer coach, discus and shot coach, who are responsible about the development of their own events. There is also at one extra coach for the training camps and practical work to work with national coaches. They have own budget but are not hired. So every event has two "professional" coaches from Federation.

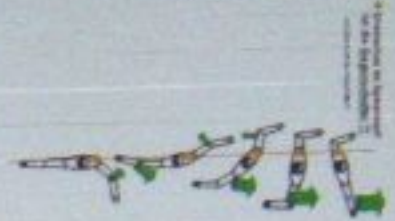
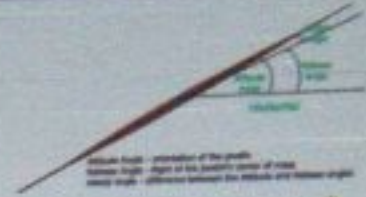
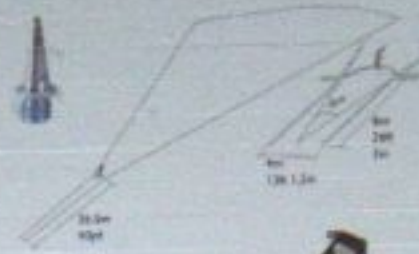
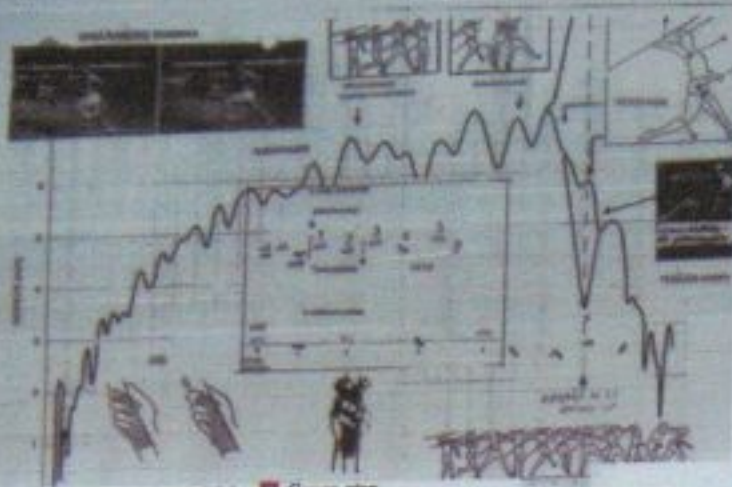
Area coaches does not get any salary but they have small budget for driving etc.

Very strong pressure has been put to personal coaching. Almost every athlete (in throws) has personal coach, who are with the pretty high procentage in training camps together with athlete. This means that chancing experience is easy to organize and is very natural during the camps. The minus side is that support for personal coaches is still very minimal.



Cornerstones of javelin throwing technique: Kari Ihalainen

창 던지기 기술의 기초:



높는 속도 29 m/s



WOMEN 5 m/s

걸은 속도 7 m/s



WOMEN 25 m/s

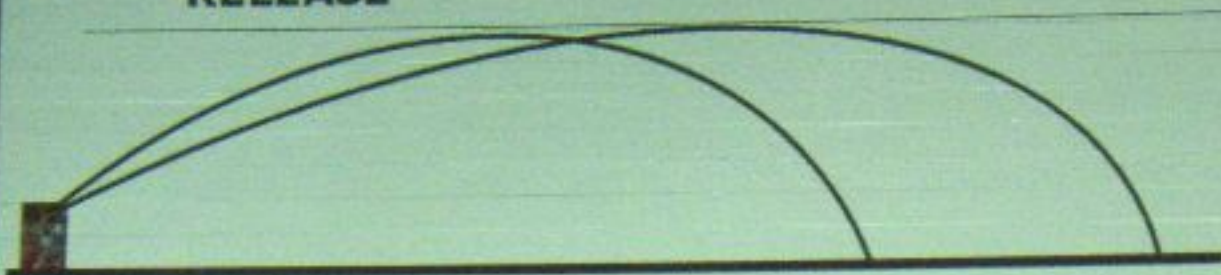


MOST IMPORTANT MAIN POINTS FOR JAVELIN THROWING

장 던지기의 가장 중요한 포인트

ANGLE OF RELEASE

창 놓는 시점의 각도

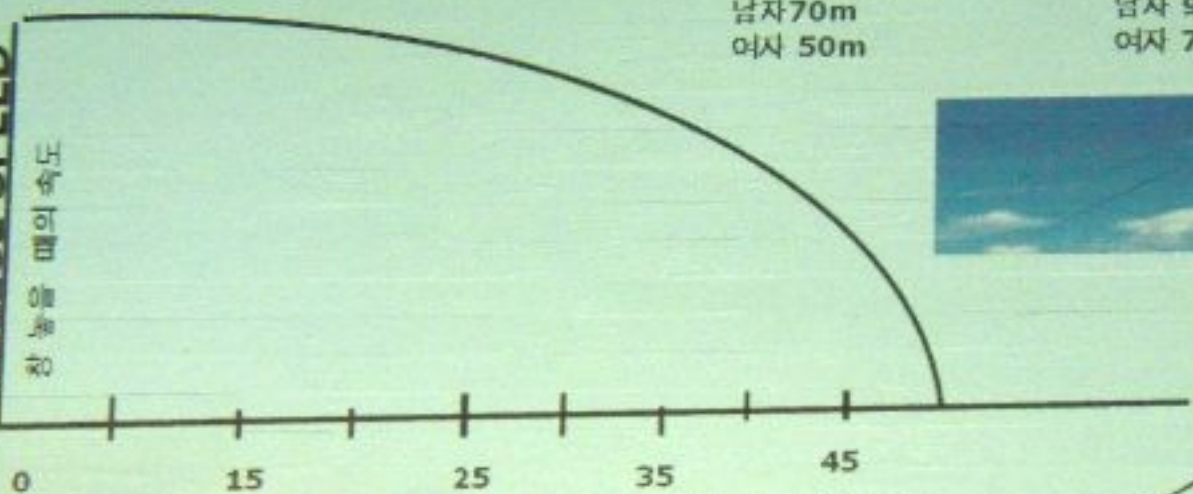


Men 70m
 Women 50m
 남자 70m
 여자 50m

Men 90m
 Women 70m
 남자 90m
 여자 70m

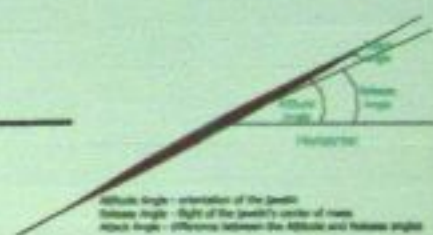
RELEASE SPEED

창 놓을 때의 속도



RELEASE ANGLE DEGREES

창 놓는 시점의 각도

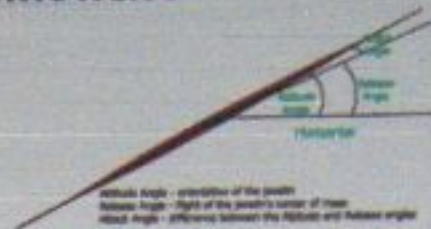


Attack angle - orientation of the shaft
 Release angle - right of the shaft's center of mass
 Attack angle - difference between the Attack and Release angle

Kari Ihalainen

MOST IMPORTANT MAIN POINTS FOR JAVELIN THROWING

장 던지기의 가장 중요한 포인트



장 놓을 때의 가장 좋은 각도

BEST RELEASE ANGLE FOR JAVELIN

WHAT IT'S THE BEST FOR YOU ????

당신에게 가장 좋은 각도는?

BEST RELEASE ANGLE SPEED FOR JAVELIN THROWER

두창선수에게 가장 좋은 장 놓는 각도의 속도



창 던지기



BODY MEASURES

	men	women
height	175-200 cm	160-190cm
weight	80-110 kg	60-85kg
"wing span"	5-15cm on top of your height	

TEST MEASURE

Flying start 20m	2.15-2.27	2.30-2.45
Flying start 100m	10.3-10.7	11.7-12.2
Standing long jumps/m	3.10-3.30	2.65-2.85
Standing 3- bunni jumps/m	10.00-11.40	7.70-8.00
10m-run long jumps/m	6.20-6.50	5.20-5.40
Packward 5 kg/m	21.50-23.00	4kg 17.00-18.00
Overhead 4 kg/m	19.00-21.00	2kg 19.00-21.00
Snatch	body weight+10-15kg body weight+5-10kg	
Full squat	2xbody weight 1.8xbody weight	

THROWING IN PRACTICS

Medicine ball	2-5kg	100-200	throws	1-3kg	100-200	throws
weighted ball	1.5-2.5kg	60-100	throws	0.8-1.5kg	60-100	throws
Javelin throws	1-step	10-20	50-60m	10-20	35-45m	
Javelin throws	5-6-step	20-30	75-85m	20-30	50-60m	
Javelin throws	full run	10-15	80-88m	10-15	60-65m	



8-12 years throwing
70000-100000 throws on hand javelin &
Weighted ball & medicine ball

Physical capabilities needed in javelin throwing

A good javelin thrower is usually a result of years of both general and javelin specific training. The throwing distances depend on the thrower's ability to combine fast running and the mentioned throwing steps into an explosive throw. For this purpose the thrower has to be fast, well coordinated, explosive, strong and have a talent to this. In addition to the capabilities mentioned above, the thrower has to have true excitement for the sport and long-term determination for training.

창던지기에서의 신체능력

좋은 창던지기 선수가 나왔다는 것은 수년간 일반 트레이닝과 창던지기 특화 트레이닝을 모두 병행한 결과라고 할 수 있다. 선수가 폭발적으로 얼마나 멀리 던지느냐는 앞에서 말했던 스텝과 달리기 속도를 얼마만큼 잘 조화를 시키느냐에 달려있다. 이러한 이유로, 선수들은 더 빨라져야 하며, 조화가 잘 이루어지고, 폭발성을 지니고 강해야 하며, 좋은 창던지기에서 있어 재능도 갖추어야 한다. 위에 말한 능력에 덧붙여서, 선수는 스포츠 자세를 즐겨야 하며, 장기적 트레이닝 계획도 세워야 한다.



There is no easy way to the top. The athlete has to do many different types of training. He/she has to be tough and believe in his/her own potent. There are numerous exceptions to these rules. The javelin weight only few hundred grams, so people with different body types have a possibility to succeed. Improve yourself.

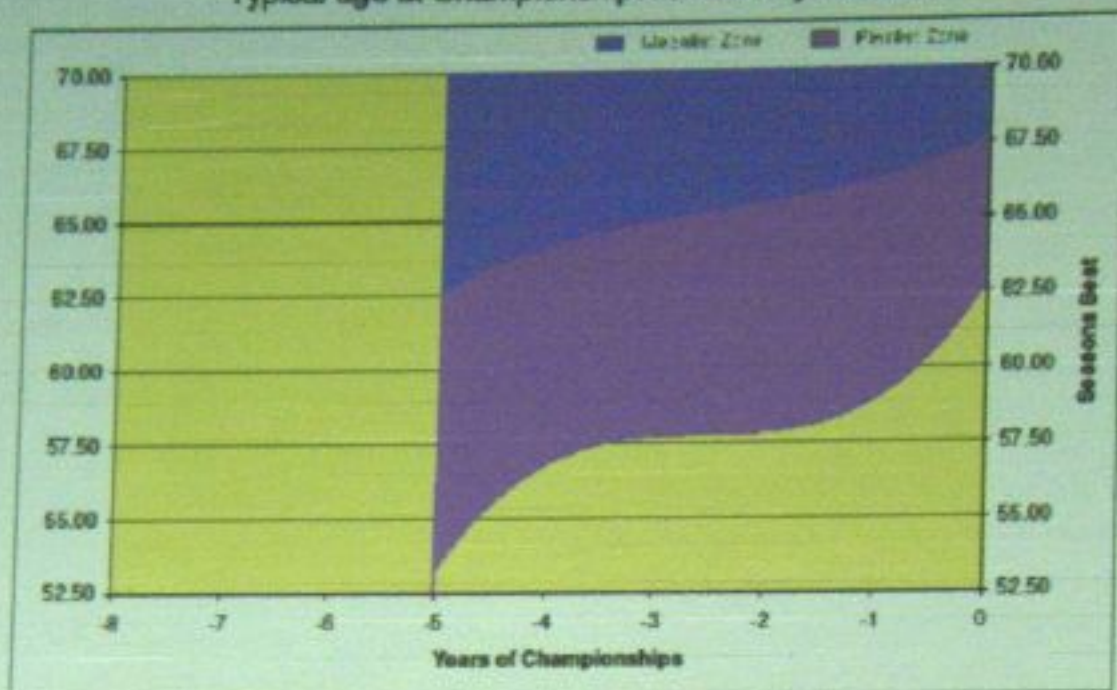
최고가 되는 지름길은 없다.

선수들은 매우 다양한 종류의 트레이닝을 한다. 남자 선수들 여자 선수들 지간에 강해야 하며 자신의 능력을 믿어야 한다. 라는 말의 여의도 수도 없이 찾아볼 수 있다. 창의 무게가 몇 백그램 밖에 되지 않기에, 서로 다른 몸의 형태를 지니고 있어도, 누구나 성공할 가능성을 가진다. 자신을 발전시켜라.

Women's Javelin Throw Performance Funnel



Typical age at Championships: 24 to 34 years old

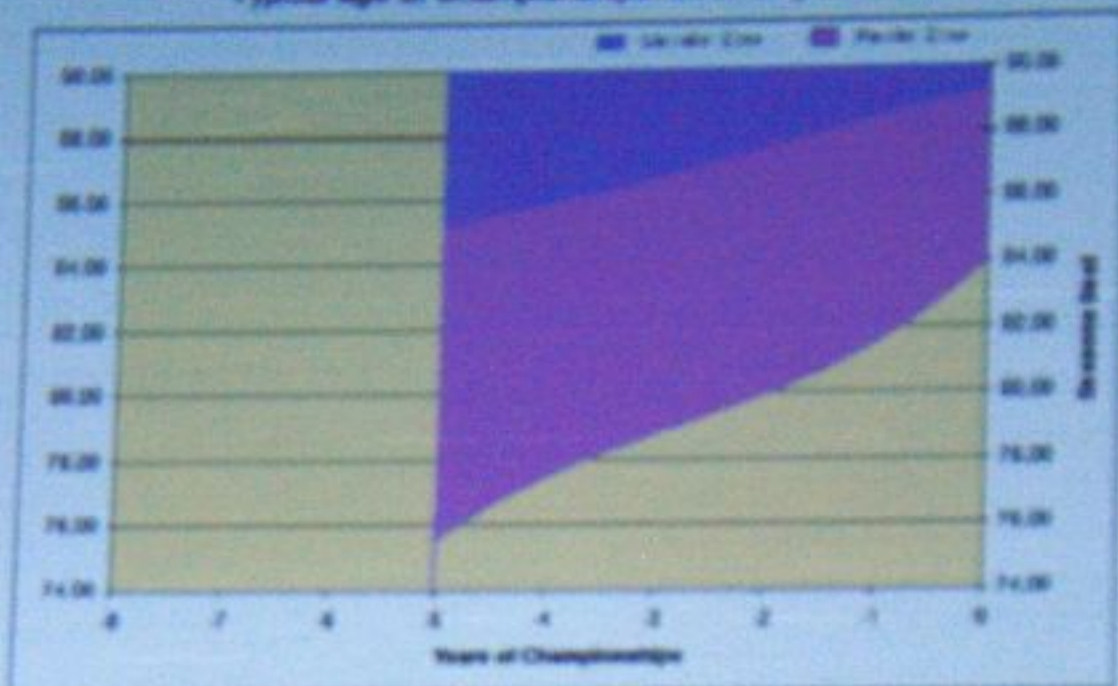


- Potential medallists will typically have a rising performance profile in the Medallist zone or close to the top of the Finalist zone.
- Potential finalists (top eight) will typically have a rising performance profile within the middle of Finalist zone.
- Athletes with a low training age and/or a quickly rising performance profile at the bottom of the Finalist zone are also showing the potential to reach the final and/or medal.
- Young Athletes with performances well above the funnel should be viewed with caution.
- Blasting injury, successful Athletes are unlikely to have a flat, or falling, performance profile.
- Successful athletes are able to consistently perform at, or close to, their season's best under pressure.
- For more guidance on using the performance Funnel see www.ukathletics.net, World Class performance section.

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Men's Javelin Throw Performance Funnel

Typical age at Championships: 24 to 32 years old



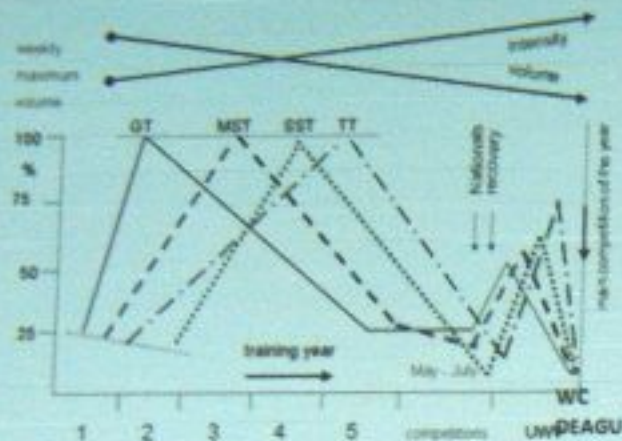
- Potential world-class will generally have a strong performance profile in the World-class zone or close to the top of the Elite-class zone.
- Potential world-class (top-eight) will typically have a strong performance profile within the middle of Elite-class zone.
- Athletes with a new training age and/or a young, strong performance profile at the bottom of the Elite-class zone are also showing the potential to reach the top world-class level.
- Young athletes with performance well above the baseline should be viewed with caution.
- Strong, young, successful athletes are unlikely to have a flat or falling performance profile.
- Successful athletes are able to consistently perform at or close to their personal best under pressure.
- For more guidance on using the performance Funnel see more athletes and World Class performance section.

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Learning from Nature!



A solid base of all type of specific training- the principle of wave-like periodization



training cycles (1-12) JULY AUGUST
 DECEMBER JANUARY FEBRUARY MARCH APRIL

General periodization scheme of the training year in javelin throwing
 GT - general training MST - maximum strength training
 SST - special strength training ST - throwing training
 UWV - immediate preparation for the main competition of the year
 ("unmittelbare Wettkampfvorbereitung", the last 6-8 weeks before the main competition)

THE TRAINING YEAR IN JAVELIN THROWING 2010-2011

2010-2011 창던지기 연감 훈련 계획표

GT - General period

GT - 표준화

MST - Maximum strength training

MST - 최대근력훈련

SST - Special strength training

SST - 스페셜근력훈련

UWV - Preparation for the main competition

-the last 6-8 weeks before the Daegu WC

UWV - 중요 대회 전까지의 준비과정

-대구 세계선수권전까지의 마지막 6-8주

TT - Throwing training

TT - 던지기훈련

13th IAAF WORLD CHAMPIONSHIPS IN ATHLETES

27 August - 4 September 2011 DAEGU KOREA

Timetable - Javelin Throw

Men

Date Time Event Round Status

01/09 19:00 Javelin Throw Qualification . . .

03/09 19:10 Javelin Throw Final . . .

Women

Date Time Event Round Status

01/09 10:10 Javelin Throw Qualification . . .

02/09 19:10 Javelin Throw Final . . .

13th IAAF WORLD CHAMPIONSHIPS IN ATHLETES	ENTRY STANDARDS	MEN	WOMEN
27 August - 4 September 2011 DAEGU KOREA	Three athletes from the country	A 82.00m	A 61.00m
	Only one athlete from the country	B 75.50m	B 59.00m

PERIOD OF A YEAR TRAINING CYCLE	GT - 표준화	MST - 최대근력훈련	SST - 스페셜근력훈련	TT - 던지기훈련	UWV - 중요 대회 전까지의 준비과정	Competition Period
Nov-13	September - October	November - December	January - February	March - April	May - June	July-August

period of a training cycle GT - General period MST - Maximum strength training

BASIC TRAINING SYSTEM

(november-april)

The goal is balanced, developed training

HIGH INTENSIVE TRAINING

Training camps
- 5 long weekends / year in Finland
- 6-8 weeks training abroad

- Throws
- 2x/week
- Added always:
- * Running
- * Jumping
- * Shots
- throws / Medicine balls
- * Coordination

Strength
- 2x/week

Muchle circuit training
- 1x/week

Aerobic training
- 2x/week

Strength movements for stability muscles
- 2x/week by rubber band
- Pilates

Body-Care
- 6x/week
- Stretching
- Nutrition
- Supplements
- Massage every once in a while



세계로 향하는 길에 꼭 써야 할 테스트
TESTS USED BY FINNISH JAVELIN THROWERS

FINLAND In door 테스트

Name	NC-47 HEFFO 96.77	NC-81 HUMMO JONNINEN 99.32m	NC-89 AKI PARVIAHO 93.86m	NC-67 TERO PELTONEN 94.22m	WRMS 20m MATTI KILRH 95.23m	JUHA LAUNGAN 95.23m	HARRI FALHOLMAREN 97.86m
Height	1891	1891	2004	2007	1985	1932	1882
Weight	114	97	100	80	100	80	102
Age	28	25	23	25	24	22	26
Flying start 20m		2.25	2.21	2.12	2.16	2.19	2.27
Standing start 50m	3.96						
Standing long jump/m	3.20	3.23		3.30	3.20	3.25	3.18
Standing 2-barre jumps	3.84	3.80	18.22	11.10	10.31	10.25	5.48
Standing 5-jumps	14.25	15.55	16.04	16.94	16.70	16.06	14.7
Overhead 4 kg	22.46	19.40	22.30	21.80	21.82	17.85	26.42
Overhead 2 kg	22.40	23.40	21.40	21.25	21.20	21.50	21.40
Overhead 1 kg		22.60	24.30	24.00	22.10	22.40	21.80
Backward 7 kg	18.45	17.22		18.90	18.20		
Backward 5 kg		20.34	22.04	24.04	24.75	20.40	21.45
Backward 4 kg	25.70	22.45	24.22	24.60	27.40	24.85	25.20
Forward 7 kg	16.30	15.30		17.90	17.45		
Forward 5 kg		19.10	20.50	21.70	21.42	18.80	20.80
Forward 4 kg	23.10	20.90	23.95	23.60	22.80	21.20	22.55
Standing throw 2 kg	42.50	39.40	42.50	41.40	42.00	41.40	40.50
Standing throw 1.4 kg	46.24			41.00	42.00		46.50
Bench press	180	120	150	160	155	120	200
Pushover	142	110	120	120	125	120	140
Pushoverup	2x30	2x30	2x25	2x30	2x30	2x25	2x25
Power clean	180	140	150	150	150	140	130
Jerks	175	140	150	150	150	140	130
Squat	135	110	122.5	122.5	122.5	120	110
Full squat	270	200	200	210	220	220	200
Front squat	240	175	180	180	180	180	175
Elftank squat	2x40	2x30	2x20	2x20	2x20	2x20	2x20
Standing javelin	44.70m	41.00m	42m	42m	42m	41m	43.80m

There are a lot of different tests used by javelin throwers, one reason for this may be that it's almost impossible to specify what a prototype javelin thrower looks like. Some throwers are strength throwers others are technique throwers, because of this it's also very difficult to make standards for test results, but it's good to do lots of different tests in order to check if the athlete is improving his skills in javelin throwing, specific power, speed, strength and other qualities.

방던지기 선수들이 많이 쓰고 다양한 테스트들이 있는데 그 중 유난히 이쪽은 꼭 방던지기 선수들이 강해야 할 것들이 어떤 것인지 확실치 않지만 아마 거의 모두가 쓰기 때문일 것이다. 어떤 선수는 힘으로 던지고 어떤 선수는 기술로 던지기 때문에 테스트 결과와 기량을 맞추기가 매우 어렵고. 특히나 방던지기에서 그들의 기량, 즉 던질 속도, 세력 그리고 다른 자격요건들.

Following these test values can everyone find out his/her own weaknesses and otherwise can find out how training will affect physical capacity of different body movements (e.g. relation between maximum power and explosive power, meaning that there are elasticity in the body meaning that there are elasticity in the body)

다음에 보아지는 테스트들의 결과는 각 선수들의 약점을 찾을 수 있다는 것과 다른 한편으로는 훈련이 어떤식으로 해서 신체 능력 특화된 움직임에 도움을 줄 것인지를 찾을 수 있다는 점에 있다. (어떤 힘이 최대 힘과 폭발력의 차이와 관계는 몸의 탄력성을 뜻한다)



KOREA 테스트

이름	KOREA						Coul 2010
	HEHEA JUNG SANG JIN	KOREA JUNG SANG JIN	KOREA JUNG SANG JIN	KOREA JUNG SANG JIN	KOREA JUNG SANG JIN	KOREA JUNG SANG JIN	
결과	75.34m	75.30m	79.96m	80.88m			83m
년식	2/18/2003	3/15/2003	2000	2000	2011		2010
몸무게/kg	95	90	90	90	90	100	90
키/cm	188	183	183	188	188	188	183
나이	24	24	25	26	27		27
몸무게 1kg 스탠딩 투	2.28		2.27	2.25			2.25
스태팅 1kg 스탠딩 투	2.90		2.95	3.01	3.01	3.01	3.18
스태팅 2kg 스탠딩 투	8.29	8.30	8.45	8.24	8.10		8.09
스태팅 5kg 스탠딩 투	14.58	14.70	14.73	14.50	14.20		15.75
방던지기 4 kg	14.55	14.10	16.20	17.10	17.80		16.50
방던지기 2 kg	21.20	22.00	22.20	21.40	21.10		21.30
방던지기 1 kg	22.25	24.55	25.20	27.60			26.90
백워드 7 kg				18.20	18.22		21.00
백워드 5 kg	18.15	19.20	19.45	18.75	18.77		21.00
백워드 4 kg	20.50	22.90	23.20	22.95	23.00		24.50
백워드 7 kg				14.40	14.10		16.30
포워드 5 kg	15.10	16.72	17.80	17.85	17.81		21.50
포워드 4 kg	18.00	18.45	18.80	20.10	20.15		26.90
방던지기 2 kg	33.00	32.50	32.80	34.90	34.95		36.90
저서 던지기 1.4 kg							44.0
저서 던지기 1 kg							44.0
벤치 프레스	125	130	135	130			140
풀오버	6x70	6x70	6x75	6x50		100	140
풀오버업	6x30	6x30	6x30	6x70	6x71		6x70
파워 클린	120	130	130	135	140		140
저크	110	120	125	125	125		140
스쿼트	2x30	2x30	2x35	102.5	100		110
풀 스쿼트							170
프론트 스쿼트							170
엘프트랭크 스쿼트	6x160	6x200	6x220	6x260	6x280		6x260
스태팅 제발 투	32.00	32.00	32.00	34.20	34.30		37m

핀란드 장던지기 팀에 의해 사용된 테스트
TESTS USED BY FINNISH JAVELIN THROWERS

MEN	FINLAND					in door 20m	
	VIC-87 SEPPÖ RATY	VIC-81 KIMMO KORHONEN	VIC-99 AKO PARVIAINEN	VIC-87 TERO PITKANMAA	VR85 78m MATTI NARHI	JUHA LAUKKANEN	HARRI HAKKARAINEN
Name							
Result	89.96m	90.82m	93.06m	91.23m	88.24m	88.22m	87.80m
Year	1991	1991	2001	2007	1999	1992	1995
Weight	114	97	100	90	100	90	103
Heightcm	188	186	193	195	186	186	182
Age	29	23	27	25	24	23	26
Flying start 20m		2.25	2.21	2.12	2.18	2.18	2.27
Standing start 30m	3.96				3.28	3.25	3.10
Standing long jumps/m	3.20	3.23		3.38			
Standing 3-burni jumps	9.84	9.80	10.22	11.10	10.31	10.23	9.40
Standing 5-jumps	14.25	15.55	16.04	16.94	16.70	16.06	14.7
Overhead 4 kg	22.46	20.40	22.30	21.90	20.85	17.55	20.65
Overhead 2 kg	32.40	29.40	30.40	30.25	29.20	27.00	28.40
Overhead 1 kg		35.60	34.50	34.00	33.10	32.45	33.80
Backward 7 kg	18.45	17.22		18.95	19.20		
Backward 5 kg		20.54	22.04	24.04	24.75	20.40	21.65
Backward 4 kg	25.70	23.45	26.22	26.60	27.40	24.85	25.30
Worward 7 kg	16.80	15.50		17.10	17.45		
Worward 5 kg		19.10	20.50	21.70	21.43	19.80	20.08
Worward 4 kg	23.10	20.90	23.05	23.60	23.80	21.20	22.55
Standing throw 2 kg	43.50	39.60	42.50	41.65	42.00	41.65	46.95
Standing throw 1.5 kg	46.24						
Standing throw 1 kg				61.00	62.00		66.50
Bench press	180	120	155	160	155	150	200
Pullover	145	110	120	120	125	120	140
Pullover-up	2x90	2x80	6x85	2X90	5x80	6x75	6x85
Power clears	180	140	150	155	150	160	150
Jerks	175	140	150	155	150	160	150
Snatch	135	110	122.5	122.5	122.5	120	110
Full squat	270	200	200	210	220	220	200
Front squat	210	175	180	180	6x170	180	175
Elfant squat	2x400	2x355	2X290	2X290	8X280	2X270	2X260
standing javelin	56.70m	61.00m	62m	62m	62m	61m	69.90m

There are a lot of different tests used by javelin throwers, one reason for this may be that it's almost impossible to specify what a prototype javelin thrower looks like. Some throwers are strength throwers, others are technique throwers, because of this it's also very difficult to make standards for test results, but it's good to do tests every ones in a while to check if the athlete is improving her skills in javelin throwing, specific power, speed, strenght and other qualities.

장던지기 선수들이 했던 많은 다양한 테스트들이 있는데

그 중 하나인 이유는 각 장던지기 선수들이 갖추어야 할 능력이 어떤 것인지 확실히 명시하기가 거의 불가능 하기 때문일 것이다. 어떤 선수는 힘으로 던지고 어떤 선수는 기술로 던지기 때문에 테스트 결과와 기록을 장하기가 매우 어렵다.

하지만 선수들의 능력이 향상될수록 이같은 테스트를 위해 체력을 허투르 하는 것이 좋다.

장던지기에서 그들의 기량, 특정 힘, 속도, 체력 그리고 다른 자력요건들.

Following these test values can everyone find out his will affect physical capacity of different body movement meaning that is there any elasticity in the body 다음에 보여지는 테스트들의 중점은 각 선수들의 약점과 훈련이 어떤식으로 서로 다른 몸 움직임의 체계적인 (예를 들어 최대힘과 폭발적인 힘 사이의 관계는 몸 안의



KOREA 한국

이름	KOREA	KOREA	KOREA	KOREA	KOREA	KOREA	Coal
	JUNG SANG JIN	JUNG SANG JIN	JUNG SANG JIN	JUNG SANG JIN	JUNG SANG JIN	JUNG SANG JIN	2010 goal to throw 63m
연도	2/15/2008	8/15/2008	2009	2010	2011		
몸무게 kg	95	98	98	98	100		98
키 cm	188	188	188	188	188		
나이	24	24	25	26	27		
올림픽 스타트 20m	2.28		2.27	2.25			2.25
스타팅 스타트 30m							
스타팅 원리 뛰기 m	2.90	2.95	3.03	3.01	3.03		3.18
스타팅 5단 공중 뛰기	9.20	9.30	9.45	9.24	9.18		9.00
스타팅 5단 뛰기	14.58	14.70	14.75	14.50	14.25		15.75
오버헤드 4 kg	14.58	16.10	16.20	17.10	17.10		18.00
오버헤드 2 kg	21.20	22.00	23.20	21.45	24.60		25.50
오버헤드 1 kg	23.22	24.55	25.20	27.50			30.00
백워드 7 kg				15.25	15.22		
백워드 5 kg	18.15	19.20	19.45	19.75	19.77		21.00
백워드 4 kg	20.50	22.90	23.20	22.95	23.00		24.50
포워드 7 kg				14.45	14.35		
포워드 5 kg	15.10	16.72	17.00	17.85	17.61		18.50
포워드 4 kg	18.00	19.45	19.00	20.10	20.15		21.50
저서 던지기 2 kg	33.00	33.50	33.60	34.90	34.95		36.00
저서 던지기 1.5 kg							
저서 던지기 1 kg							
병자 포켓스	125	130	135	130			140
골오버	6x70	6x70	6x75	4x90	100		100
골오버 업	6x50	6x55	6x60	6x70	6x75		6x70
복합 골인	120	120	130	135	140		140
저크	110	120	125	135	135		140
스태치	2x80	2x90	2x95	102.5	100		110
올 스쿼트					170		
프론트 스쿼트							
백스쿼트	6x150	6x200	6x220	6x260	6x240		6x250
스타팅 재발력	52.00	53.00	55.00	54.20	51.50		57m



다

everyone find out his/her own weaknesses and otherwise can find out how training
 Merent body movements (e.g. relation between maximum power and explosive power,
 y in the body

각 선수들의 무릎을 꿇을 수 있다는 점과 다른 점으로는
 몸집이 작고 가벼운 선수의 장점은 힘의 전달이 빠르다는 것인데 이를 활용할 수 있다는 점에 있다.
 이외의 점들은 표의의 다른 부분에서 보겠다

TESTS USED BY FINNISH JAVELIN THROWERS

핀란드 장던지기 팀에 의해 사용된 테스트

Name	FINLAND					
	WOMEN	EC	OC	WC 2RT	Junior WC	PAULA
	TINA LÄLÄH	PÄIVI ALAFRAN	HELI RAHTARE	MIRJALEI BÖGBERG	TARJA UPPA	PAULA HUHTANEN
Result	74.70m	67.70m	67.94m	67.32m	63.70m	64.80m
Year	1983	1990	1995	1997	1999	2003
Weight kg	80	82	73	72	70	70
Height/cm	180	175	176	174	172	165
Age	22	27	26	23	20	28
Flying start 20m	2.41	2.41	2.31	2.40	2.35	2.38
Standing start 30m						
Standing long jumps/m						
Standing 3- bunny jump	8.05	8.45	9.06	8.22	8.15	8.65
Standing 5- jumps	13.05	13.35	14.30	12.00	12.80	13.85
Overhead 2 kg	22.80	20.70	20.10	20.15	18.90	19.90
Overhead 1 kg	25.45	25.25	25.45	25.30	22.70	24.00
Backward 4 kg	17.30	20.55	17.45	17.15	16.20	17.30
Backward 3 kg						
Forward 4 kg	18.00	17.45	16.50	15.35	14.00	15.00
Forward 3 kg						
Standing throw 1 kg	40m	40m	40m	37m	37m	38m
Bench press	2x80	100	90	95	92.5	85
Pullover	2x85	2x90		2x78		
Pullover up	2x90	4x87.5	6x55	6x45	6x50	6x50
Power cleans	105	120	105	95	100	100
Jerks	165	125	100	87.5	100	100
Snatch	75	100	80	65	77.5	70
Full squat	120	160	130		125	125
Front squat		130	100			
Enfant squat				100	2x100	
standing javelin/m	50m	42m	43m	42m	43m	42m



KOREA

이름	KOREA							GOAL
	KIM KYUNG A	KIM KYUNG A	KIM KYUNG A	KIM KYUNG A	KIM KYUNG A	KIM KYUNG A	KIM KYUNG A	
결과	54.25M	58.76M	57.70M	68.89m	57.26m			2010
년도	2/2/2008	8/6/2006	10/20/2009		2010	2011		65
몸무게 kg	63kg	63kg	63kg	63.4kg				163
키/cm	183	183	183	183	183	183		
나이	20	20	24	24	22	23		
플러잉 스타트 20m			2.40	2.44				2.40
스탠딩 스타트 30m				4.15				2.60
스탠딩 멀리 뛰기/m				2.60	2.50			7.90
스탠딩 3단 병용 뛰기	7.55	7.65	7.40	8.05	7.55			13.00
스탠딩 5단 점프	12.50	12.75	12.50	13.44				
오버헤드 2 kg	14.07	back	14.65	16.08	16.25			17.00
오버헤드 1 kg	15.70	pain	18.50	20.70	20.60			23.00
백워드 4 kg	12.85		14.30	15.45	15.70			17.00
백워드 3 kg			15.25	16.90	17.21			17.00
포워드 4 kg	10.90		12.40	13.75	14.38			14.00
포워드 3 kg			13.90	14.75	16.00			15.00
저서 던지기 1 kg	26.00	28.35	28.80	32.00				34m
벤치 프레스			70	77.5				80
풀오버	5x40	6x45	6x50	6x60	6x65			6x60
풀오버 업			4x40	6x45				6x45
파워클린	85	75	85	80	88			90
저크	80		80	85				85
스네치	2x50	2x60	62.5	62.5	65			67.5
풀 스쿼트			125	130	115			140
프론트 스쿼트				90				
엔fant 스쿼트	6x120	6x140	2x130	6x160	6x150			6x150
스탠딩 재발던/초	35.70	40.00	42.00	41.00	40.10			45m

There are a lot of different tests used by javelin throwers, one reason for this may be that it's almost impossible to specify what a prototype javelin thrower looks like. Some throwers are strength throwers others are technique throwers, because of this it's also very difficult to make standards for test results, but it's good to do tests every ones in a while to check if the athlete is improving his skills in javelin throwing, specific power, speed, strength and other qualities.

핀란드계 선수들이 했던 최고 다양한 테스트들이 있는데 그 중 하나와 이유는 각 장던지기 선수들이 갖추어야 할 전체력이 어떤 것인지 확실하게 측정하기가 거의 불가능하기 때문일 것이다. 어떤 선수는 힘으로 던지고 어떤 선수는 기술로 던지기 때문에 테스트 결과의 기준을 정하기가 매우 어렵다. 하지만 선수들의 능력의 향상할수록 미묘한 테스트를 하여 체력을 향우하는 것이 좋다. 핀란드계에서 그들의 기법, 특정 힘, 속도, 세력 그리고 다른 자력작용들.

Following these test values can everyone find out his/her own weaknesses and otherwise can find out how training will affect physical capacity of different body movements (e.g. relation between maximum power and explosive power, meaning that is there any elasticity in the body)

다음에 보여지는 테스트들의 총점은 각 선수들의 약점을 찾을 수 있다는 점과 다른 강 편으로는 훈련이 어떤식으로 해서 다른 몸 움직임의 세력적인 능력에 효과를 줄 것인지를 찾을 수 있다는 점이 있다. [예를 들어 최대력과 폭발적인 힘 사이의 관계는 몸 연의 탄력성을 뜻한다]



TESTS USED BY FINNISH JAVELIN THROWERS

핀란드 장던지기 팀에 의해 사용된 테스트

Name	WOMEN			FINLAND		
	WC TERA LILLAK	EC PAIVI ALAFRAN	DC HELI RANTANE	WC 3RT MIKAELA INGBERG	Junior wc TAINA UPPA	PAULA HUHTANEMI
Risalt	74.76m	67.78m	67.94m	67.32m	63.78m	64.88m
Year	1983	1990	1996	1997	1996	2003
Weight kg	80	82	73	72	78	70
Height/cm	180	175	175	174	172	165
Age	22	27	26	23	20	28
Flying start 20m	2.41	2.41	2.31	2.46	2.35	2.35
Standing start 30m						
Standing long jumps/m						
Standing 3- bunny jump	8.05	8.45	9.06	8.22	8.15	8.05
Standing 5- jumps	13.05	13.35	14.30	12.80	12.80	13.85
Overhead 2 kg	22.00	20.70	20.10	20.15	18.00	19.90
Overhead 1 kg	25.45	25.25	25.45	25.30	22.70	24.00
Backward 4 kg	17.30	20.85	17.45	17.15	16.20	17.30
Backward 3 kg						
Forward 4 kg	16.00	17.45	16.50	15.35	14.80	15.05
Forward 3 kg						
Standing throw 1 kg	48m	40m	40m	37m	37m	38m
Bench press	3x80	100	90	95	92.5	85
Pullover		2x85	3x60		3x70	
Pullover up	3x60	4x57.5	6x55	6x45	5x50	6x50
Power cleans	105	130	105	95	105	100
Jerks	105	125	100	87.5	100	100
Snatch	75	100	80	65	77.5	70
Full squat	130	160	130		125	125
Front squat		130	100			
Enfant squat				195		2x190
standing javelin/m	50m	42m	43m	42m	43m	42m



- 어름
- 결과
- 년도
- 몸무게 kg
- 키/cm
- 나이
- 플러잉 스타트
- 스탠딩 스타트
- 스탠딩 멀리
- 스탠딩 3단
- 스탠딩 5단
- 오버헤드 2 kg
- 오버헤드 1 kg
- 백워드 4 kg
- 백워드 3 kg
- 포워드 4 kg
- 포워드 3 kg
- 서서 던지기
- 벤치 프레스
- 풀오버
- 풀오버 업
- 자유틀업
- 저크
- 스내치
- 풀 스쿼트
- 프론트 스쿼트
- 하프 스쿼트
- 스탠딩 자유틀업

There are a lot of different tests used by javelin throwers, one reason for this may be that it's almost impossible to specify what a prototype javelin thrower looks like. Some throwers are strength throwers others are technique throwers, because of this it's also very difficult to make standards for test results, but it's good to do tests every ones in a while to check if the athlete is improving her skills in javelin throwing, specific power, speed, strenght and other qualities.


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Following these test values can everyone find out his/her own weaknesses and otherwise can find out how training will affect physical capacity of different body movements [e.g. relation between maximum power and explosive power, meaning that is there any elasticity in the body

다음에 보여지는 테스트들의 중점은 각 선수들의 역점을 찾을 수 있다는 점과 다른 한 편으로는 표현이 어떤식으로 서로 다른 몸 움직임의 체계적인 능력이 효과를 줄 것인지를 찾을 수 있다는 점에 있다. (예를 들어 최대힘과 폭발적인 힘 사이의 관계는 몸 안의 탄력성을 뜻한다)

KOREA

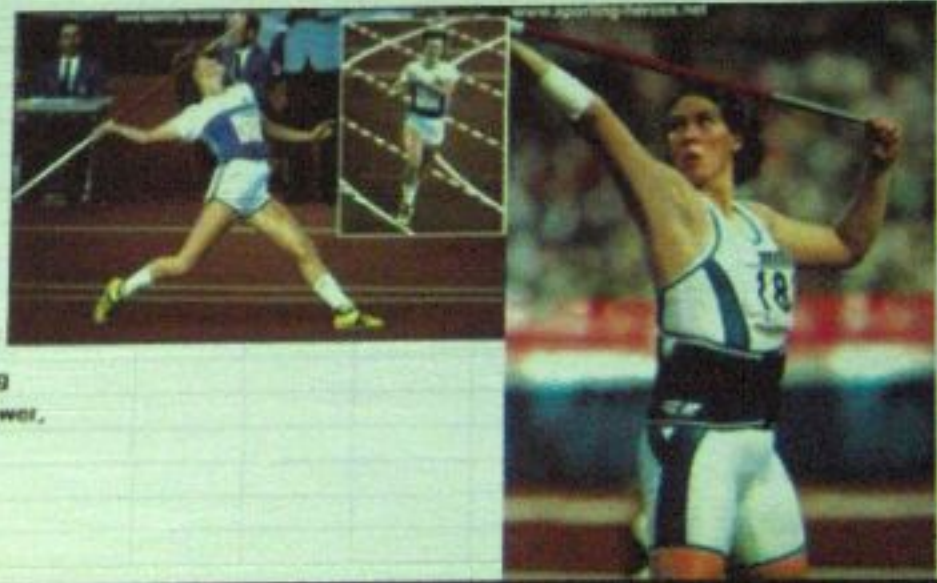
PAULA HUHTANEMI 64.88m 2003 70 165 28 2.35 8.65 13.05 19.90 24.00 17.30 15.05 9m 85 150 100 100 70 125 190 m		KOREA						
		KIM KYUNG AE	KIM KYUNG AE	KIM KYUNG AE	KIM KYUNG AE	KIM KYUNG AE	KIM KYUNG AE	GOAL SETTING
64.88m		54.25M	58.76M	57.70M	58.09m	57.36m		63M
2003		3/23/2008	5/6/2008	10/30/2009	2010	2011		2010
70		63kg	63kg	63kg	63.4kg	65KG		65
165		163	163	163	163	163		163
28		20	20	21	22	23		
2.35				2.40	2.44			2.40
8.65					4.35			
13.05					2.60	2.50		2.60
19.90		7.55	7.65	7.40	8.05	7.55		7.90
24.00		12.58	12.75	12.50	13.44			13.00
17.30								
15.05								
9m								
85								
150								
100								
100								
70								
125								
190								
m								
		오버헤드 2 kg	back	14.65	16.08	16.25		17.00
		오버헤드 1 kg	pain	18.90	20.70	20.60		23.00
		백워드 4 kg		14.30	15.43	15.70		15.00
		백워드 3 kg		15.25	16.90	17.21		17.00
		포워드 4 kg		12.40	13.75	14.38		14.00
		포워드 3 kg		13.90	14.75	16.00		15.00
		서서 던지기 1 kg	26.00	28.35	28.80	32.00		34m
		벤치 프레스		70	77.5			80
		종오버	5x40	6x45	6x50	6x60	6x65	6x60
		종오버 업			6x40	6x45		6x45
		파워클린	85	75	85	80	88	90
		저크			80		85	85
		스네치	2x50	2x60	62.5	62.5	65	67.5
		풀 스쿼트			125	130	115	140
		프론트 스쿼트				90		
		데프 스쿼트	6x120	6x140	2x130	6x160	6x150	6x150
		스탠딩 재벌던/m	39.70	40.00	42.00	41.00	40.10	45m

may be that it's
length throwers
results.

기가 거의 불가능 하기 때문일 것이다.
가 매우 어렵다.

otherwise can find out how training
in maximum power and explosive power.

한 편으로는
는 짐에 있다.



PROGRESSION OF TEST RESULTS

MIKAELA INGBERG

	1988	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Javelin	15v	16v	17v	18v	19v	20v	21v	22v	23v	24v	25v	26v	27v	28v
10 average	43.92	51.98	52.30	54.00	58.20	56.70	55.15	55.99	57.33	56.43	61.50	64.03	63.11	63.50
30m flying							2.91	2.48	2.48					2.52
1-throw									5.25	5.15	5.28		5.24	
2-throw										7.55				8.22
3-throw	6.55		7.20	7.70	7.70		7.80	7.88						12.80
5-jumps	12.04	11.85	11.83	12.10	12.40		12.40	12.81						16.10
OHF 3kg	13.02	15.28	16.45	16.13	16.30	19.30	18.88	19.70	19.35	19.45	19.10			16.95
OHF 3kg	12.34	13.70	14.70	15.84	16.50		17.08	16.80			16.90	16.90	16.90	16.75
OHF 4kg			14.10	15.90	16.50		17.18	16.80						14.10
OHF 3kg			13.20	14.80	14.45		15.19	14.05						
OHF 1kg					20.50			25.40		27.50				
OHF 2kg			14.10	15.90	16.80	17.20	20.05	19.85	20.20	20.45	19.85	18.90	18.20	19.20
OHF 3kg								15.10		14.48				
OHF 4kg						13.30	13.05					13.30		
standing 1kg					33.70		30.50				26.50 (m)	30.40		
Front Sit							95	120	100	140	140	140		145
Half neckquet		100					175			190	195			2x190
Clean		50	65	70	80	3x70	87.5							95
Scratch		27.5		50	50		55	55		57.5	65			3x55kg
Bench		40	50	52.5	55	65	77.5	87.5	90	95	95	95		95
Jerk								70.0	82.5		90			82.5

Results age 10-14

400g	600g	
21.04		10y
34.65		11y
35.20		12y
41.86	33.70	13y
41.92	41.78	14y

ACHIEVEMENTS
 1993 - 1st Jr European Championships
 1995 - 3rd World Championships
 1996 - 7th Olympic Games
 1997 - 4th World Championships
 1998 - 3rd European Championships
 1999 - 9th World Championships
 2000 - 9th Olympic Games
 2001 - 6th World Championships
 2002 - 3rd European Championships



PROGRESSION OF TEST RESULTS

MIRKAELA INOBERG

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
javelin	15v	16v	17v	18v	19v	20v	21v	22v	23v	24v	25v	26v	27v	28v
10 average	43.92	51.96	52.30	54.00	56.26	58.70	65.16	65.66	67.32	68.43	61.50	64.03	63.11	63.50
				50.63	55.06	56.56	62.22	61.66	65.52	64.63	59.05	62.50	60.92	61.93
20m flying	2.58	2.54	2.52	2.46			2.51	2.44	2.48					2.52
1-frog										2.52	2.60		2.57	2.52
2-frogs									5.23	5.15	6.26		5.24	
3-frogs	6.85		7.20	7.70	7.70		7.85	7.98		7.65				8.22
5-jumps	12.04	11.95	11.83	12.10	12.40		12.40	12.81						12.80
OHB 3kg	13.02	15.28	16.45	16.13	19.20	19.30	19.85	19.70	19.35	19.45	19.10			20.10
UHF 3kg	12.34	13.70	14.70	15.84	16.50		17.08	16.80		17.40	16.90			16.96
OHB 4kg			14.10	15.50	16.50		17.18	16.80			16.60	16.90	16.90	16.75
UHF 3kg			13.20	14.80	14.45		15.10	14.05				14.90		14.10
OHF 1kg					20.50			25.40		27.58				
OHF 2kg			14.10	15.80	16.80	17.20	20.05	19.85	20.20	20.48	19.85	18.90	18.20	19.20
OHF 3kg								15.10		16.40				
OHF 4kg							13.30	13.05					13.30	
standing 1kg					33.70		33.50				26.50 (mb)	36.40		
Front Squat							95	120	100	140	140	140		145
Half backquat		100					175			190	195			2x190
Clean		50	65	70	80	3x70	87.5				60			85
Snatch		27.5		50	50		55	55		57.5	60			3x55kg
Bench		40	50	52.5	55	65	77.5	87.5	90	95	95	95		95
Jerk								70.0	82.5	85	90			82.5
											87.5			

Results age 10-14

400g	600g	
21.04		10y
34.66		11y
35.30		12y
41.88	33.70	13y
47.92	41.78	14y

ACHIEVEMENTS	
	1993 - 1st Jr European Championships
	1995 - 3rd World Championships
	1996 - 7th Olympic Games
	1997 - 4th World Championships
	1998 - 3rd European Championships
	1999 - 9th World Championships
	2000 - 9th Olympic Games
	2001 - 6th World Championships
	2002 - 3rd European Championships

SEPPO RÄTY (S.27.4.1962) 1981-1994

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Year														
JAVELIN	75.44	72.74	74.38	82.6	88.72	81.72	83.54	83.26	83.92	86.92	96.96	90.60	85.64	85.22
Weight	92	98	101	102	103	103	103	105	105	108	107	108	110	110
Height	188	188	188	188	188	188	188	188	188	188	188	188	188	188
Age	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Standing					4.16	4.06	3.96			4.06	4.06			
start 30m					275	290		302		305	329			
Standing long jumps						923			900	979	984			
Standing 2-jumps	890	909	895	888	888	923	15.40			15.18	14.25			
Standing 5-jumps	14.3	15.00	14.80		14.20	14.79					16.70			
Overhead 7.25kg				14.60	15.30	18.40	19.86	20.20	20.47	21.20	21.40	22.46	22.40	22.67
Overhead 4kg				15.80	17.35	18.40								
Packward 5.4kg							23.00	23.96	23.77	23.90	24.67	25.70	26.38	25.89
Packward 4kg										28.77	30.00	30.54		28.30
Overhead 2kg						37.00	39.80	41.10	45.85	46.24				
Standing throw 1.6kg										180	180	180	190	200
Bench press	95	100	110	120	130	125	160	170	180	180		180	190	200
Pullover			120	120	140	145	145						100	105
Pullover-up							75	80	90/2	90/2	90/2		180	180
Power cleans	120	140	140	140	150	150	170	175	173	173	180	180	185	180
Jerks			130	133	145	150	165	173	170	170	165	180	185	170
Snatch			100	110	110	110	128	140	135	140	135	140	150	130
Full squat			115	130	160	220	250	290	270	270	270	250	260	280
Front squat					140	160	190	215	205	190	210	220	200	220
Powerpull			180	180	200	220	250	250	280	260	260	260	255	240

SEPPO RÄTY

Javelin world record holder
 World champion
 World championships
 Olympic games
 Olympic games
 European championships
 Olympic games

1991 91.92& 9096
 1987 gold
 1992 silver
 1988 bronze
 1992 silver
 1994 silver
 1996 bronze

Tokio/Punkalaidun
 Room
 Tokio
 Soul
 Barcelona
 Helsinki
 Atlanta



SEPPÖ RÄTY (5.27.4.1962) 1981-1994

Year	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
JAVELIN	76.44	72.74	74.33	82.8	86.72	81.73	83.34	82.28	81.92	85.82	86.90	90.03	85.44	85.22
Weight	82	86	191	102	102	103	100	100	100	100	107	108	110	110
Height	188	188	188	188	188	188	188	188	188	188	188	188	188	188
Age	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Standing	mark 20m				4.18	4.46	5.84		4.99	4.98				
Standing long jumps					278	290		302		300				
Standing 3-jumps	890	909	908	908	938	923		889	879	904				
Standing 3-jumps	14.2	15.00	14.88		14.28	14.78	16.48			15.12	14.28			
Overhead 7.25kg				14.00	16.00	18.40	18.96	20.20	20.47	21.20	21.40	22.40	22.87	21.40
Overhead 4kg				15.00	17.20	18.40								
Pushover 7.4kg							22.00	23.96	23.77	21.40	24.87	25.76	25.24	25.20
Pushover 4kg											28.77	30.00	30.54	28.20
Overhead 2kg							27.00	28.80	41.18	45.55	46.24			
Standing throw 1.8kg														
Shot put	91	100	110	120	130	125	140	170	180	188	190	190	190	200
Putover			120	120	140	140							160	160
Putover up							78	80	90E	90Z	90E			
Power clean	120	140	140	140	160	160	170	170	170	170	180	180	180	180
Jerks			130	132	140	160	160	170	170	170	180	180	180	170
Squats			130	110	110	110	120	140	130	140	150	140	150	130
Full squat			118	130	140	220	200	260	270	270	270	280	260	280
Front squat					140	140	190	210	200	190	210	220	220	220
Powerpull			180	180	200	220	200	220	240	240	260	260	260	240

SEPPÖ RÄTY

Javelin world record holder	1991	91.506 909E
World champion	1987	gold
World championships	1992	silver
Olympic games	1988	bronze
Olympic games	1992	silver
European championships	1994	silver
Olympic games	1996	bronze

Toukokuukalenteri

Aachen
Tokio
Saal
Berlusconi
Atlanta



Valm.	Kari Ihalainen							18 year		20 year		21 year		22 year	23 year	23 year	
na	17 year		18 year			18 year		20 year		21 year		22 year	23 year	23 year	23 year	23 year	
Pvm:	1.11.92	1.1.93	1.4.93	18.10.93	27.12.93	2.3.94	9.10.94	10.4.95	17.5.95	3.8.95	28.12.95	3.3.98	25.5.98	25.5.97	1.7.98	8/1/1999	
URHEILUJA		Matti Närhi									8314m		8578m	8442m	8824m	84.32m	87.88m
Kehitys	7024m			7318m			7618m					halli					
LV	20			13			18					ME					
DIPP	19			29			25										
ETNP	50			51			50										
VLL/m	58			58													
VLL/r	13			13													
SLL/m	86			78			helkäs										
TE	80	85	85	90	95		leikkaus			100	100	105	105	115	120	122.5	
RV	110	110	120	120	180	135	helmikuussa			135	135	140	150	150			
JKE		130	130	120						140	170	180	185	185		6*170	
JKT	140	180	180	170	170	180		200		205	205	220	220	220	640	670	
2-TL													1630			1670	
5-VL	1473	1514	1475	1530	1585	1609		1460	1618	1622	1630		1630			1031	
3-TL	875	907	925	908	948	966			930	978	1000	1030	1030		160	160	
Työntö													2170	2185	2270	24.75	
P.Y.T6.4kg	1760	1830	1910	1920	2000	2054		1800		2100	2140		2170	1910	1900	2025	
A.E.5.4kg	1590	1680	1750	1800	1810	1825		1600		1860	1900	1910	1910	1900	2025	2143	
P.Y.E4kg	1410	1400	1600	1540	1665	1715		1600		1850	1855	1910	1950	2028		2085	
paikka korkeus																	
20m/L	233	290	225		2.18			2.27	2.23	218	218						
ETEENT	22		19														
SILTA	55		50	29													
SPAK	20		20	17													
LAVAT	75		70	67													
COOPER	2710			2750													
YLIVETO		80		90			100		110	110	110	110	110	110	110	110	
PAIKL 2KG		29.80			34.00	35.50			36.80			37.40		38.00		39.00	
PENKKI								130		135	140	140	145	150	155	160	

KESÄN 99 KILPAILUT

Kuortane	87.88m
Seinäjoki 8.8.99	86.34m
Erikson GB 10.8.99	85.18m
Sevilla 27.8.99kar	85.05m
Viltasaari 12.6.99	84.32m
Collins 22.5.99	83.26m
Seinäjoki 7.8.99	82.82m
El Paso 10.4.99	82.02m
Äänekoski 14.6.99	81.96m
Tukholma 30.7.99	80.83m

KAUDEN 98 OGELMAT

- tukijalan käyttö/edelleen
- teknikan aliahtavuus

VAMMAT

- vasen nilkka/akilles
- oik olkapää
- hauksen pitkänsään jänne

KYMMENEN KESKIARVO

18 year	19 year	20 year	21 year	22 year	23 year	23 year
1993	1994	1995	1996	1997	1998	1999
69.34m	74.44m	78.49m	80.76m	81.40m	81.97m	82.97m

KAUDEN 99 OGELMAT

- tukijalan käyttö/parant
- teknikan aliahtavuus
- vähien

VAMMAT

- lahentäjässä repeämä
- olkapää entisessä kunnossa
- akilles katket
- leikkuri

