

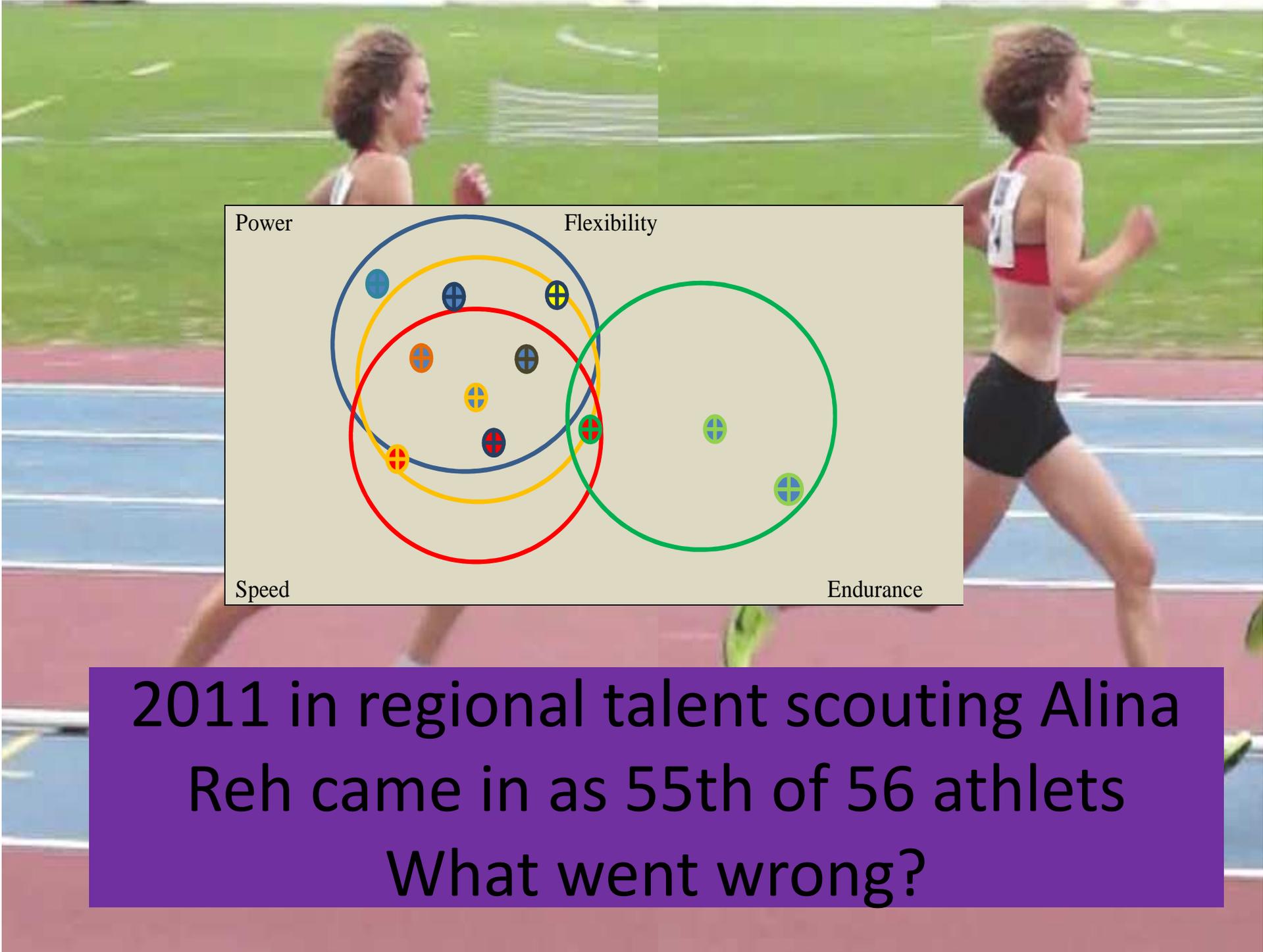


**Identifying and Developing Talents
at National Level and Models of
Long Term Athlete Development**

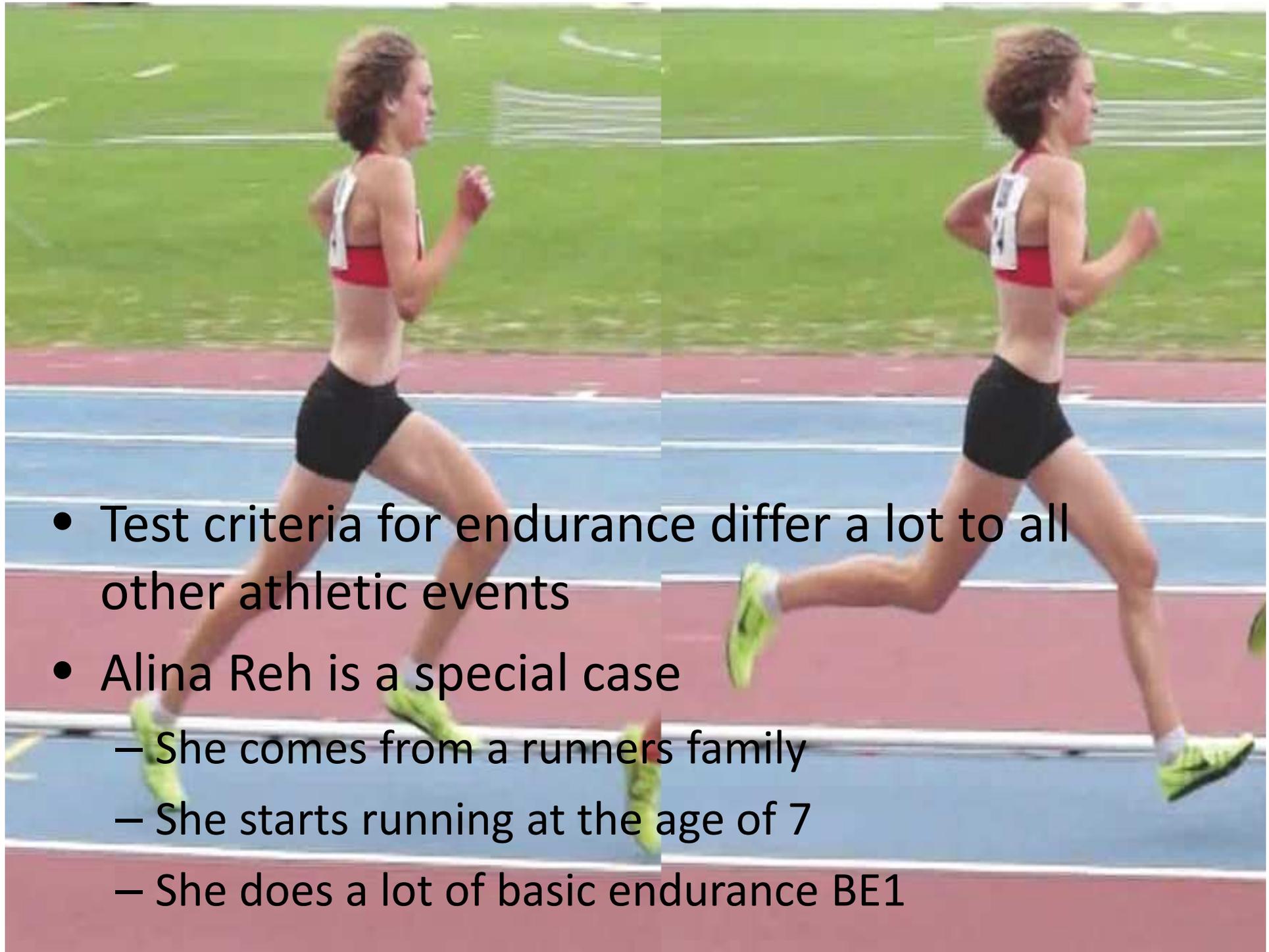


Alina Reh

- 2014 Silver Medalist Youth Olympic Games 3.000 m
- 2015 European Junior Champion 3. 000 + 5.000 m
- 2016 9. World Championships U20 5.000 m



2011 in regional talent scouting Alina Reh came in as 55th of 56 athletes
What went wrong?



- Test criteria for endurance differ a lot to all other athletic events
- Alina Reh is a special case
 - She comes from a runners family
 - She starts running at the age of 7
 - She does a lot of basic endurance BE1

Typical microcycles A. Reh before Silver Youth Olympics 2014 3.000 m

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
11.- 13.7.					Warm-Up Sprint-ABC, Runs: 10 x 150m (< 23 Sek)	Warm-Up TL BA1 5 x 1030m Forest (3:30) Start all 5:30 35 Min reg DL	BE1 10 Km
14.- 20.7.	Warm-Up 15 x 300m (51 s, Start every 2 min	BE1 10 Km	Warm-Up BE2 3 x 3 x ca. 9 Min, Break 2:30 min	BE1 10 Km	Warm-Up Sprint-ABC, Sprint: 5 x 80m, 5 x 110m, 5 x 50m	Warm-Up Runs: 10 x 400 (72 s) start every 2:30 Min 35Min easy jog	BE1 10 Km
21.- 28.7.	Warm-Up GA2 4x2x1030 forest, start every 7.20 Min	free	CE 800-1000-1200- 1000-400, (2.24, 2.59, 3.37, 3.00, 65) Break 4 min+	BE1 10 Km	Warm-Up Sprint-ABC, Sprint- programm	Warm-Up Runs: 10 x 500m (92 s) Start every 3 Min	BE1 10 Km
29.-3.8. Source: Leichtathletiktraining 8/2015		BE1 12 Km	Warm-Up Uphill: 7 x 55 s activ break 2 min	CE 500-1000 1000-500 (80,8 - 2.57 3.00 - 81,4) break 4 min+	BE1 10 Km	Warm-Up Sprint-ABC, Grass-runs	Warm-Up Runs 5 x 2.40 min start every 7.30 mi 35 Min easy jog
4.-10.8.	BE1 10 Km	BE1 10 Km	free	Warm-Up	Competition 3000 9.05,15		

Main training means:

All around training

General athletic developement

Endurance

Special endurance 800/1.500/3.000

Speed-Endurance

speed, hurdles

General and maximum power

Throwing strength

Jumping strength

Sprinting strength

Technical developement

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4.-10.8.	BE1 10 Km	BE1 10 Km	free	Warm-Up	Competition 3000 9.05,15		



- Other runners start with a combined event training in their early youth

Konstanze Klosterhalften one of the world best runners U20, olympic participant



Microcycles of a female middle-distance-runner 2014/15

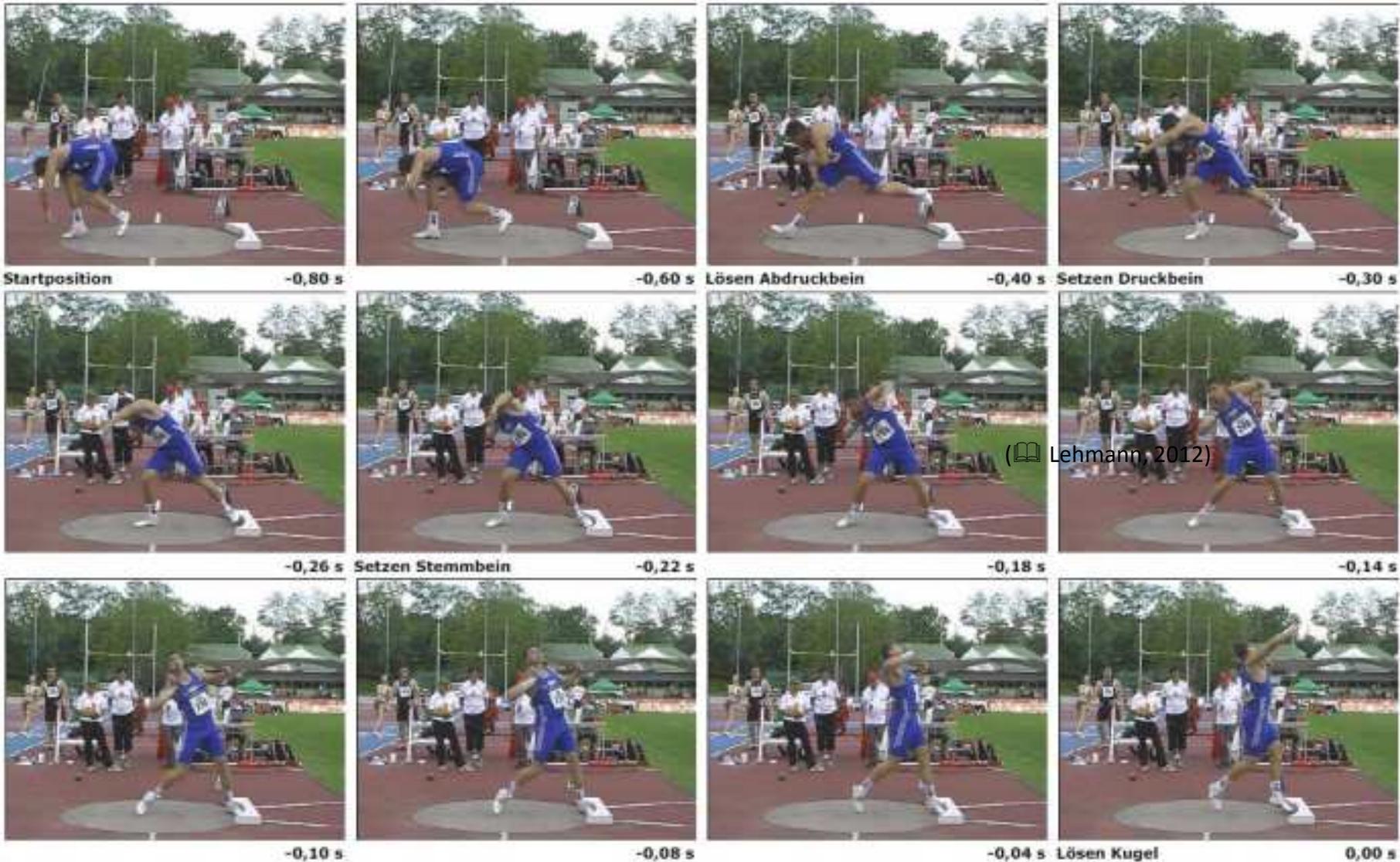
	Monday	Tuesday	Wednesd	Thursday	Friday	Saturday	Sunday
gPP Nov 2014	10 Km BE1-2 Street Gymnastics Stabi, 4 coord. 80m	4 Km jog. Gymnast. Sprint-ABC, 2x6x150 m uphill-runs TP, 3' SP, Medball Jogging gymnastics		6 Km BE1 gymnast. Jump-ABC boundings2x4 x50 m sprints 2x150 m, Jogging gymnastic	10 Km BE1 Street	4 Km jog Gymnast. Sprint-ABC 3 coord 80m 3x1.700 m (5:50-57) jogging Stabi. + gy	5 Km BE1- DL Street gymnastics
Trainig- camp Apr 2015 Morning	8 Km BE1-DL (4:13/Km) Sprint-ABC Sprint: 2x4x40 m Gymn.,athl.	Jogging gymnastics Circle-Train	3 Km jog.. gymnastic Sprint-ABC, coord 15x200 uphill 2x80 m downhill	8 Km BE1- 2- DL (3:50/km) ABC, gym. bounding 10x100 m Technic	Jogging gymnasti Stabi Strength- training	3 Km jogg SprintABC gymnastic. 10x500 m (91- 93'',TP) jogging Gymnast.	12,5 Km BE1-DL (50') gymnastic
afternoon Source: Leichtathletikt- raining 1/2016		Jogging, gymnastic ABC 2x4x40 m 1x4x50 m 150, 120 m Jogging	8 Km BE-DL Reg. (4:30/km) gymnastic	Basketball	Jogging Gymnastic Sprint: 2x30 m 2x40 m fl. 2x50 m f Jogging, gym.	8 Km BE-DL Reg (4:46/Km) Coord gymnastic	
Comp.P Jul 2015	8 Km BE-DL regenerativ	8 Km BE1-DL coord. 1x400m (62) 3x200m (29) Jog., gy., sta.		8 Km GA1-DL Coord. 4x100 m Stabi Jogging,gym.	22' Joggin Gymnastic 2 coord.	warm Up Heat 4:21 cooldown Gymnast.	Warm up Finale 4:09 min



40 % of later top athletes in Germany practiced in athletics before the age of 15

- Most of this people competed in combined events
 - Konstanze Klosterhalfen, EC U20 1.500 m
 - Gesa Krause European Champion 2016 steeple chase
 - pentathlon for runners
 - (sprint, hurdles, longjump, javelin, 2000 m)
 - Many successful throwers have been good sprinters, heptathlets or decathlets in their youth age
 - David Storl World Champion 2011 and 20013 in shot put
 - decathlon

David Storl, 2 x WC shot put



(Lehmann, 2012)

Storl, David
Junioren-Gala

Junioren-Weltrekord

22,34 m
Mannheim 13.06.09

3. Versuch
6,00 kg



Long Time Development Motor Learning Techniques for Combined Events (var. Korobkow)

1. Year of train. 2. Year of train 3. Year of train. 4. Year of train. 5. Year of train.

Sprint/quickness

Spezial event

Hurdle sprint

javelin

(pole vault)

longjump

highjump

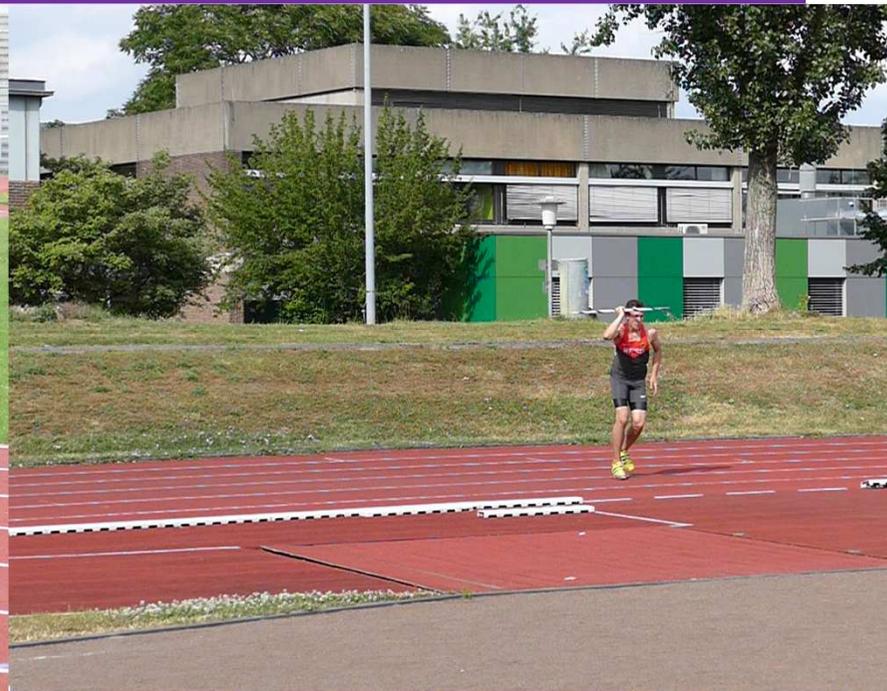
(Discus throw)

Shot put

Killing et al., 2015, Jugendleichtathletik - Mehrkampf

Speed endurance

Technique-examples 1



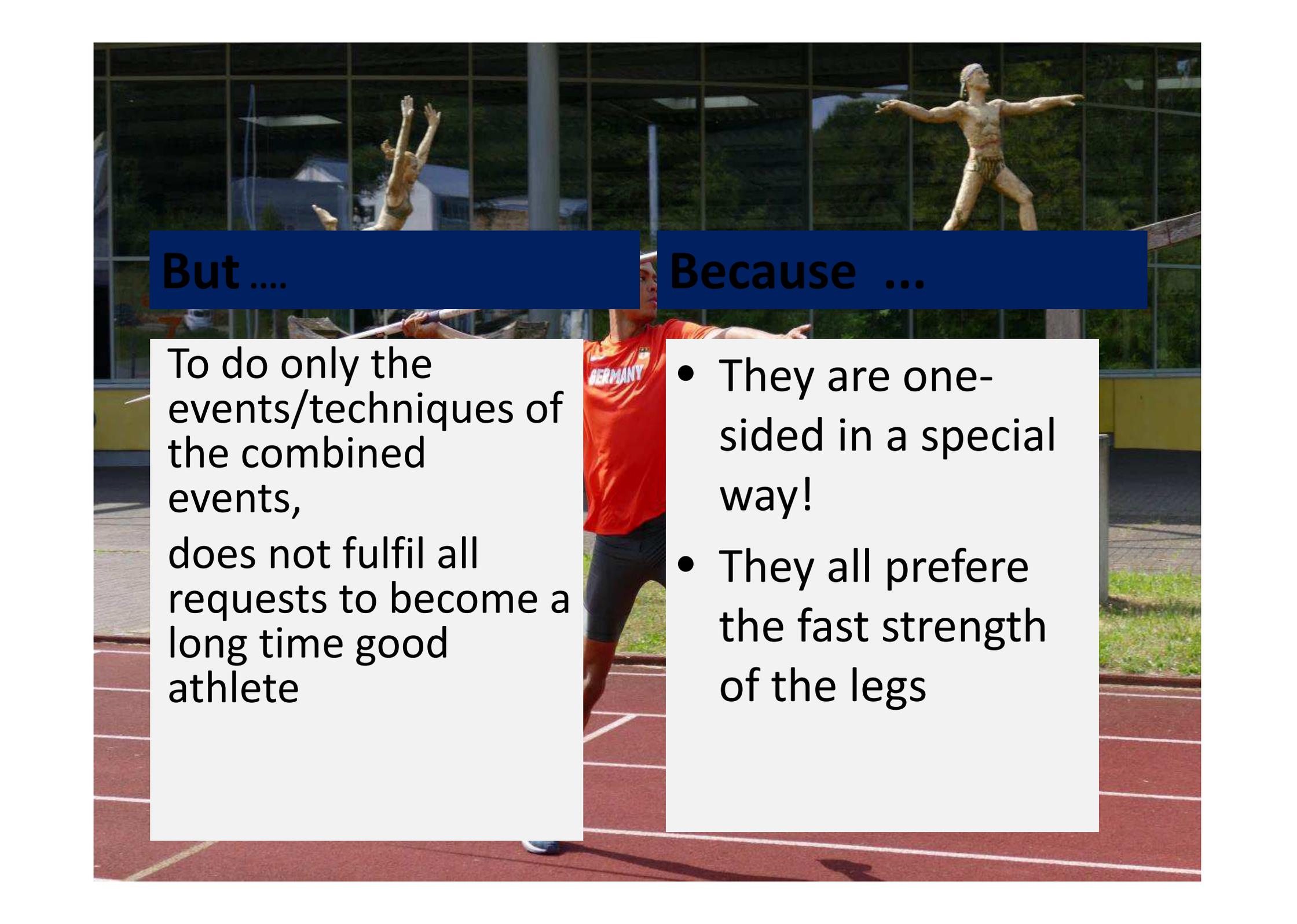
Technique-examples 2





learning all these techniques and using it in competition develops

- special kind of endurance and concentration
- to handle success and disappointment
- high and consistent motivation



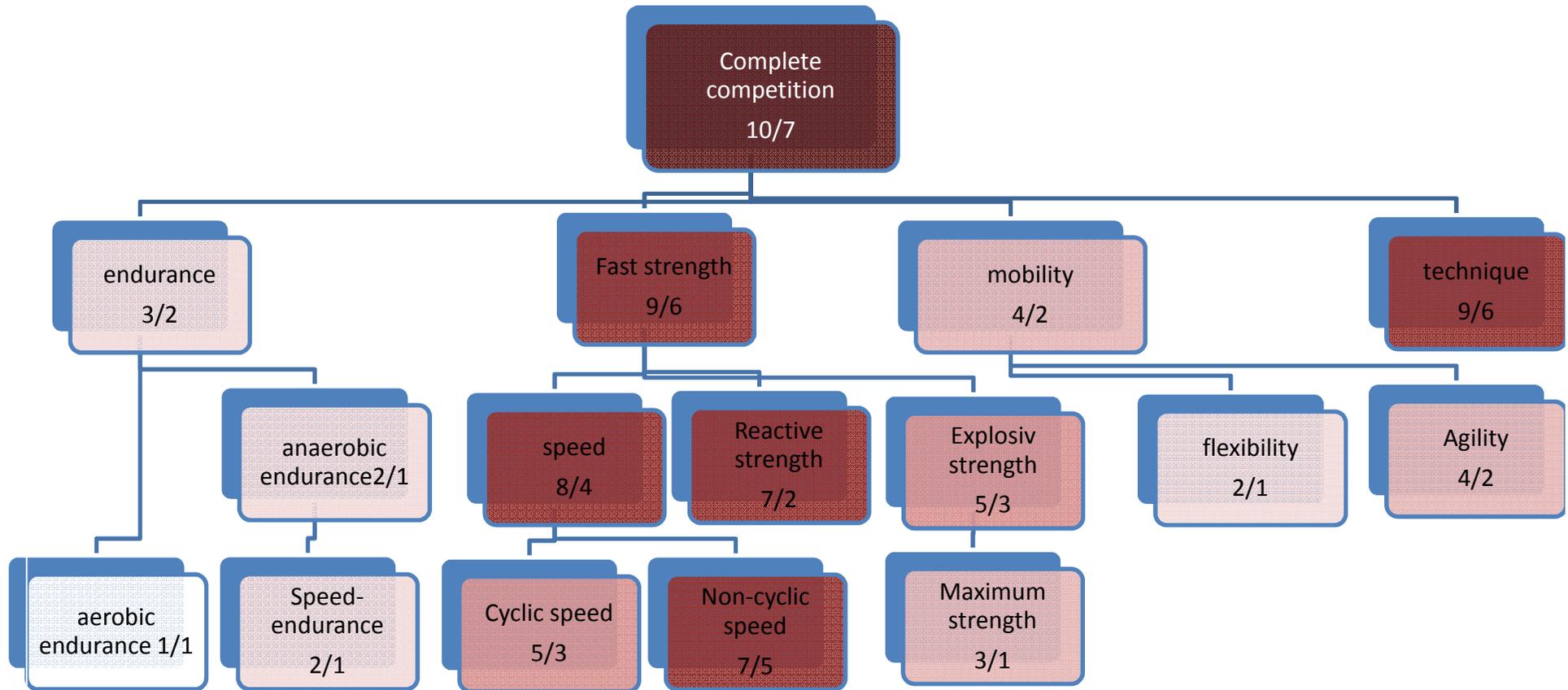
But

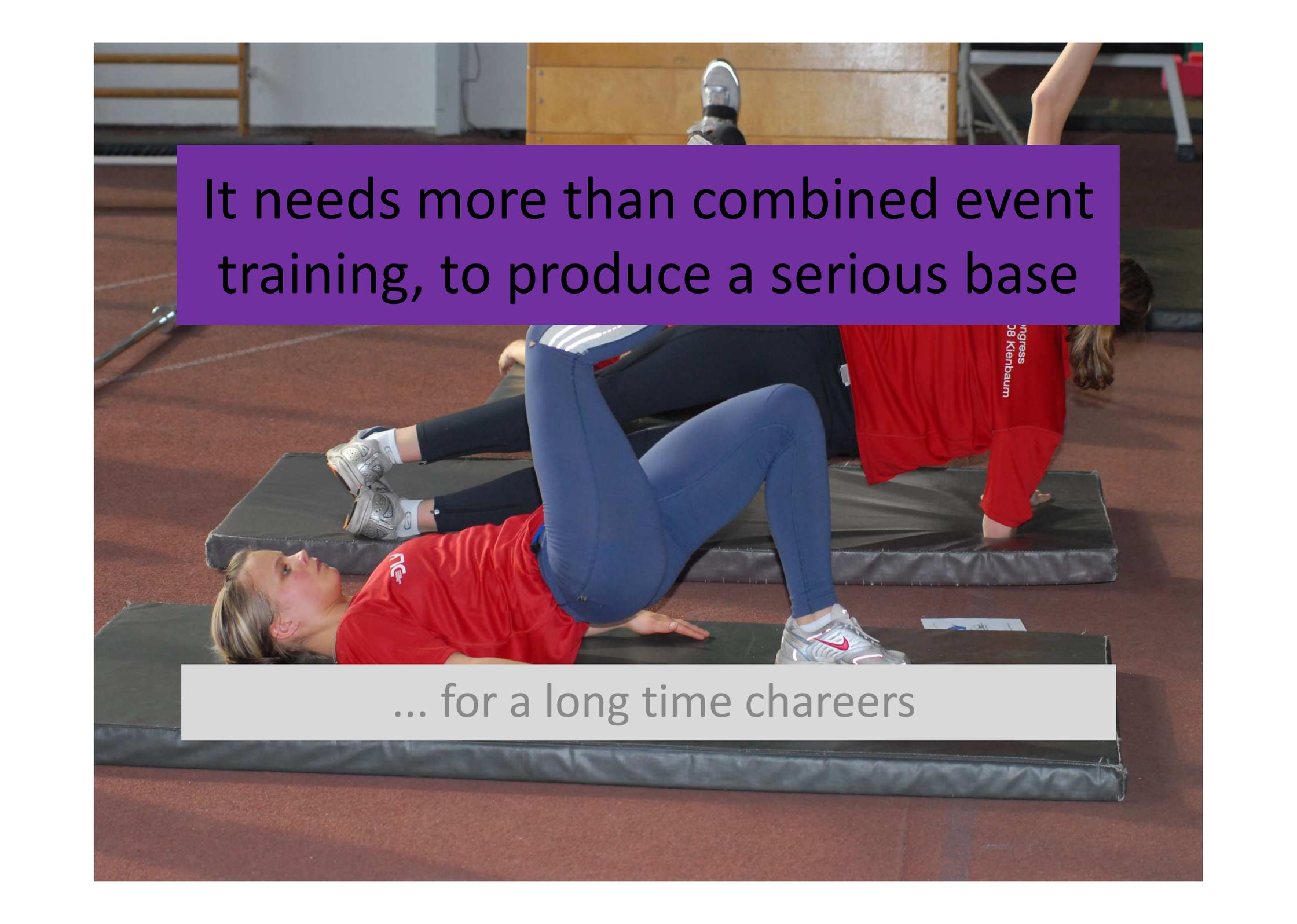
To do only the events/techniques of the combined events, does not fulfil all requests to become a long time good athlete

Because ...

- They are one-sided in a special way!
- They all prefer the fast strength of the legs

Conditional requests of decathlon and heptathlon





It needs more than combined event training, to produce a serious base

... for a long time careers

Experiences by former athletes

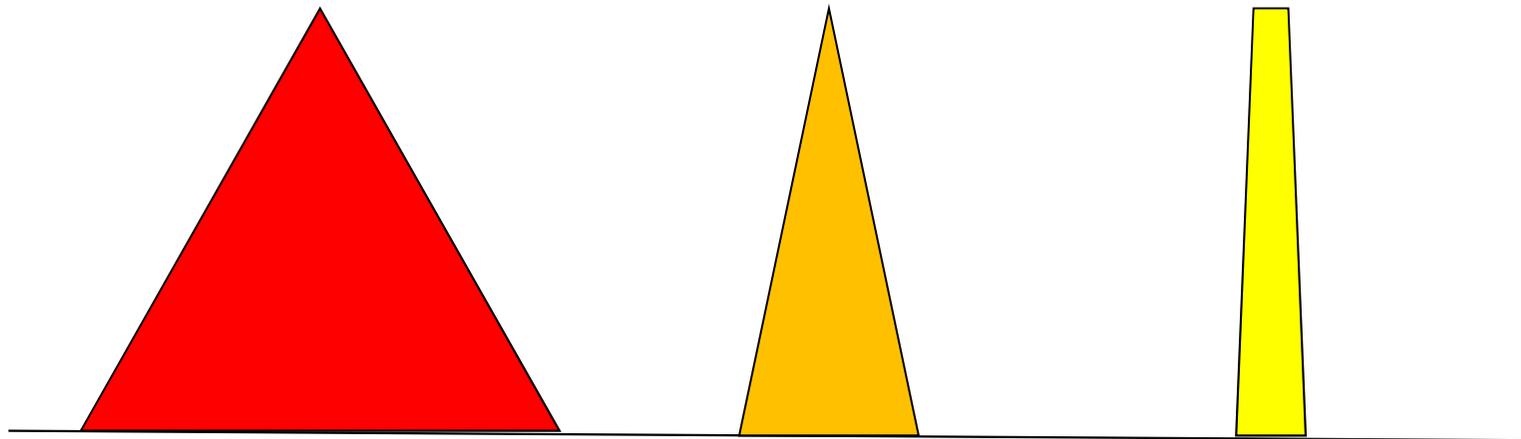


- „I specified early, but it wasn't necessary. To say the truth, I got healthy problems by it and changed the coach. He started with a lot of new exercises, so I got a new stable platform“.

- „Luckily I made a wide range of motor experiences, I did different sports till 15 and in athletics I started with a multi event training till I found my final event“.

A survey with 2.400 former Top athletes confirms, that 60 % did different sports till the age of 14-16 years, then they concentrated to their final sport!
Source: Leistungssport 2008

Different Talent-Scouting models



Wide pyramide	Small pyramide	Elevator
Everywhere possible Spread Know-How Running, sprint	Middle position Jumps, hurdles	Special facilities and Know-How- pole, hammer,

Source: Killing, Adams, Ribbecke, Leistungssport 2008



60 % of later top athletes practiced in their early youth different sports

- games like football
 - Martin Buss, WC 2001 in highjump
- individual sports like acrobatics
 - Lot of German female pole vaulters
 - Martina Strutz Silver WC 2011 4,80 m
- Typical for young sportsmen in Germany to do different sports
 - Falk Wendrich (2. WC U20 2012 HJ)
 - First ballett and swimming
 - Later athletics , soccer and badminton
 - Niklas Kaul, WC U18 2015, EC U20 2016 decathlon
 - 2 times handball-training + 1 competition each weekend till 15 years
 - plus 2 times athletics

Niklas Kaul, 83,94 m Javelin





Source: Leichtathletiktraining 7/2015

Training schedule U18 N. Kaul 2014/15 PP

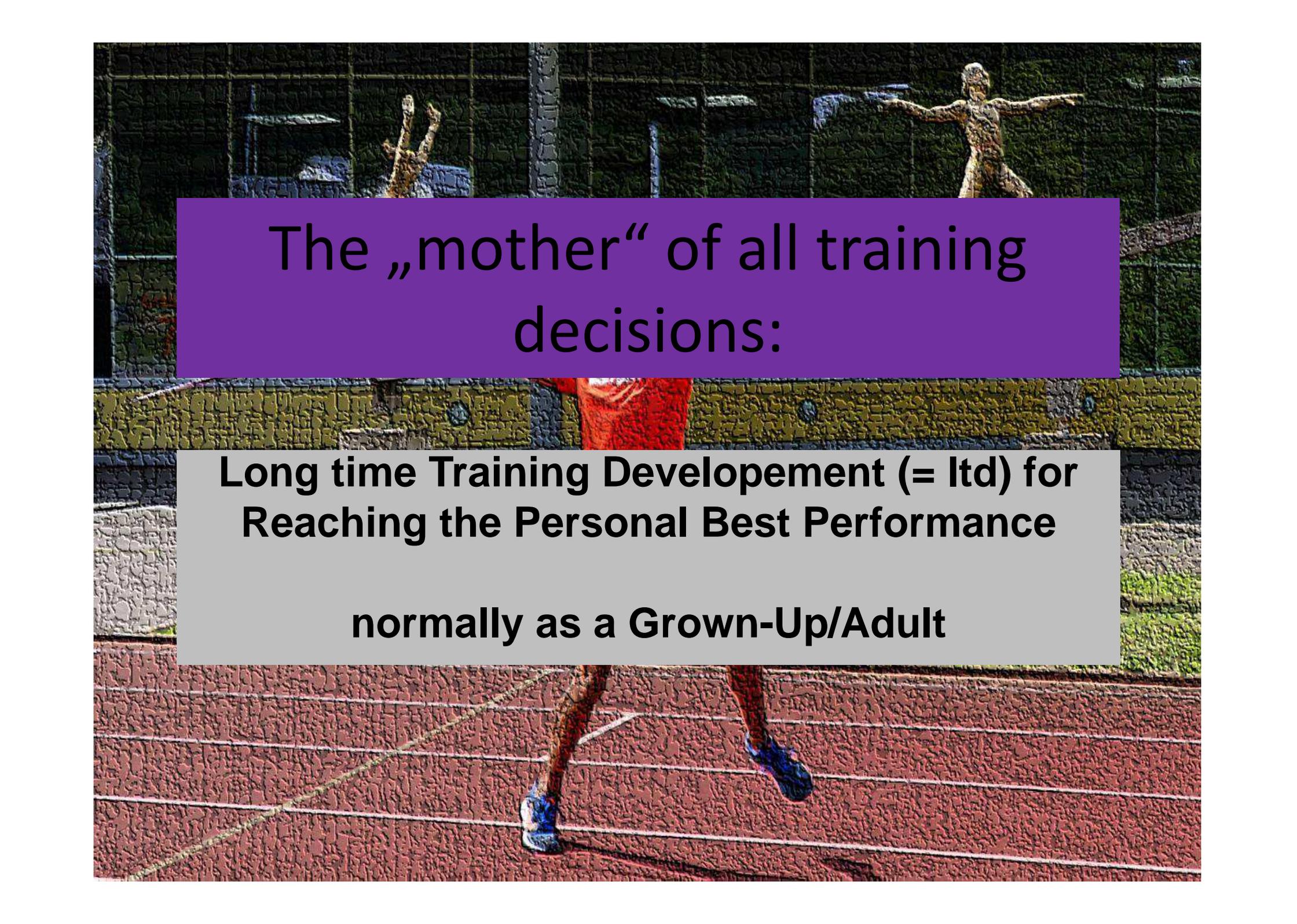
Period	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Gen PP	<p>Warm-up (10 min jogging, gymnastics) 60' Stabli-sation-circle</p> <p>2*5*10 ball-throws (600g) left and right</p>	<p>Warm-up 60 min Pole-vault</p> <p>8*300m 48-50" 3' P; 5' SP</p>	Free	<p>30 min Basketball</p> <p>30 min hurdle-sprint</p> <p>30 min shot put 20' Stabi-lisation</p>	<p>Warm-up 30 min Highjump o. longjum</p> <p>45min circletrain. 20 min endurance run</p>	<p>Warm-up 20 min acrobatics 20 min hurdles-co.</p> <p>30 min discus 3* 1000m 3:20min 3' P; 3:10-</p>	<p>Every two weeks: 60 min javelin (25 throws)</p> <p>Next week: free</p>
Sp. PP	<p>Warm-up 20 min hurdl. coordination 30 min small boundings 20 min endurance run</p>	<p>Warm-Up 60 min polevault</p> <p>Runs: 5*120m 13,5-14,0 s 5' P;</p>	Free	<p>30 min Football</p> <p>30 min hurdles 30 min shot put 20 min Stabilisatio n</p>	<p>Warm-up 30 min Highjump o. longjum.</p> <p>45 min Medball 20 min endurance</p>	<p>Warm-up 20 min acrobatics 20 min hurdle-coordina. 30 min discus 3*1000 m 2:55-3:05m 3' P;</p>	<p>Every two weeks: 60 min javelin (25 throws)</p> <p>Next week: free</p>

Training schedule U18 N. Kaul 2015

Competition period week

Monday	Tuesday	Wednes	Thursday	Friday	Saturday	Sunday
Warm-up 30 min highjump 30 min discus 20 min endurance	Warm-Up 60 min polevault Runs: 60, 80, 120m 5' P; 6,8s; 9,5s; 13,5s	free	Compe- tition pole- vault 4,60m (PB)	Warm-Up hurdles 5*1.hurdle 3*3. hurdle 30 min shot put	travel 20 min jogging gymnastics Stabilisation	Competition javelin 83,94m (NR U18)



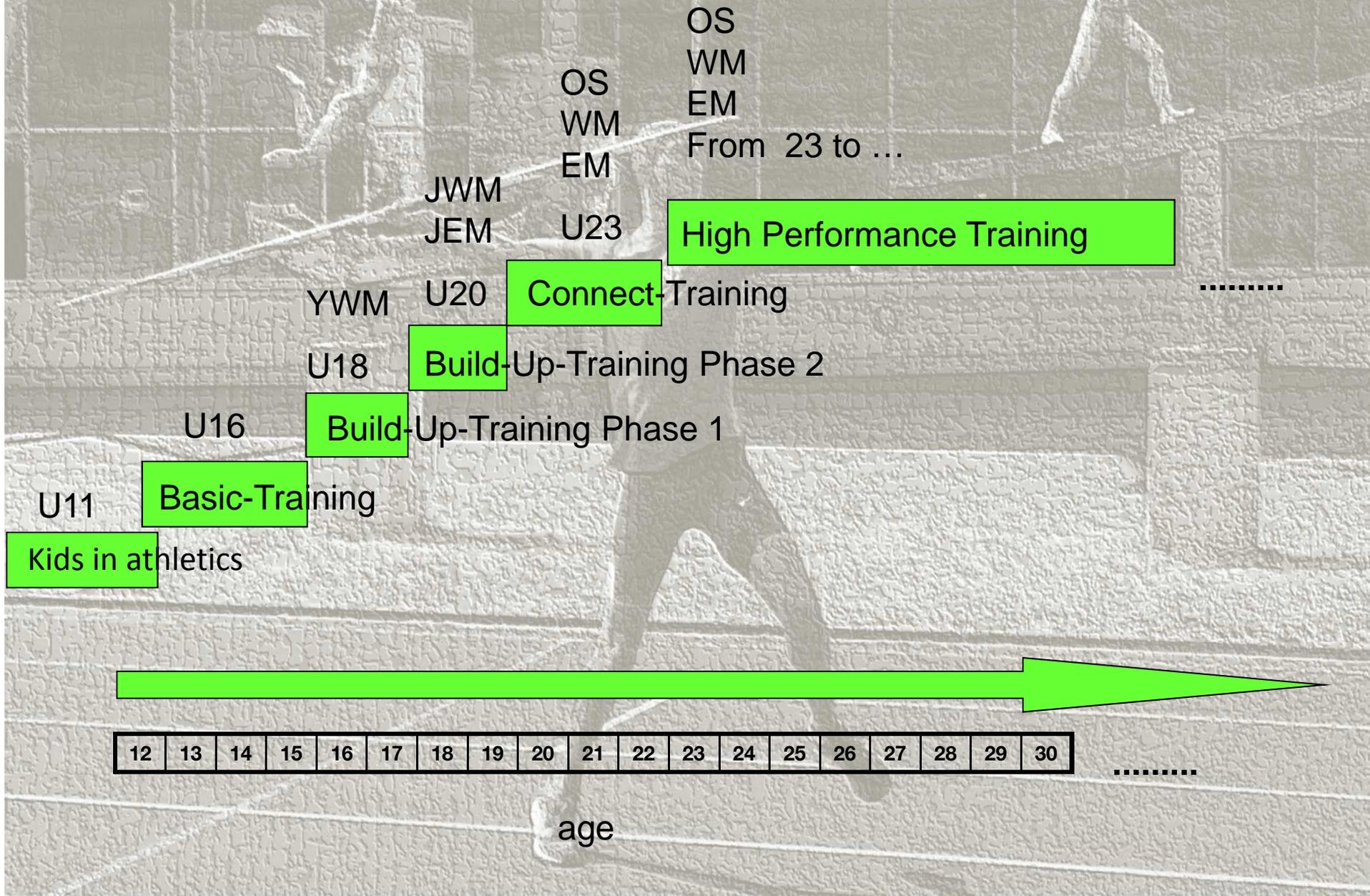


The „mother“ of all training decisions:

Long time Training Development (= ltd) for Reaching the Personal Best Performance

normally as a Grown-Up/Adult

Long time training development



Long time training phases

- Kids-in-athletics - 11 years
- Basictraining 11-15 years
- Build-Uptraining 15-19 years
- Connecttraining 19-22 years
- High Performance Training 22- years
- Life-Time-Sport 35 - years

Principles of periodisation:

By age:

rising volume of training

Higher intensity and specificity of training

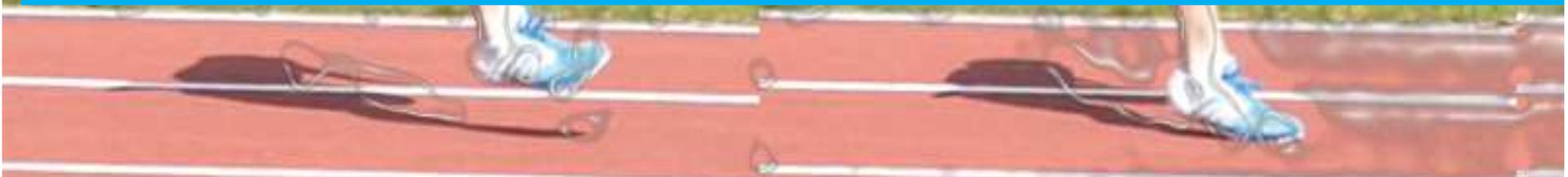
In the training year/macro-cycle:

Start with high amount of general training (gPP 1.p.)

Change to high amount of basic specific training (gPP 2. p.)

Change to middle amount of specific intensive training (sPP)

Finish with small amount of specific, intensive training (CP)



Training sessions per week basic to build-up training

- Normal school
 - 2-4 times per week
 - 1-2 sessions general training
 - 1-2 sessions technique developement
- Sport school
 - 6-8 times per week
 - 4-5 sessions general training
 - 2-3 sessions technique developement
 - 0 session specific strength, endurance, ...



Training volume by age

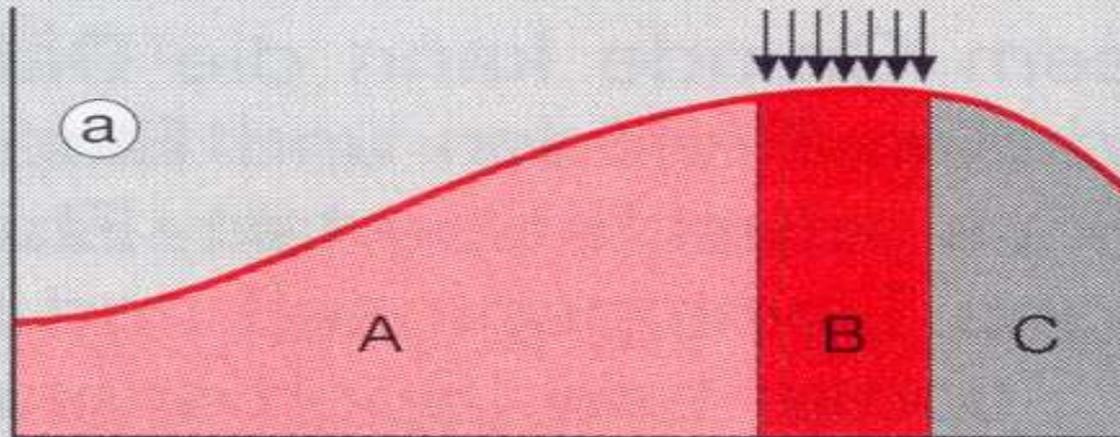
Age	Units / Week	Minutes / Training-Unit	Train.-weeks / year	Training-Units / year	Hours/year
-14	3-4	60-100	40	120-150	150-250
15-17	4-6	90-120	44	160-240	240-360
18-19	5-7	90-120	46	230-300	300-500
20-22	7-8	90-150	48	275-330	400-700
23 +	7-10	90-150	48	300-350	600-800

General Training schedule combined events

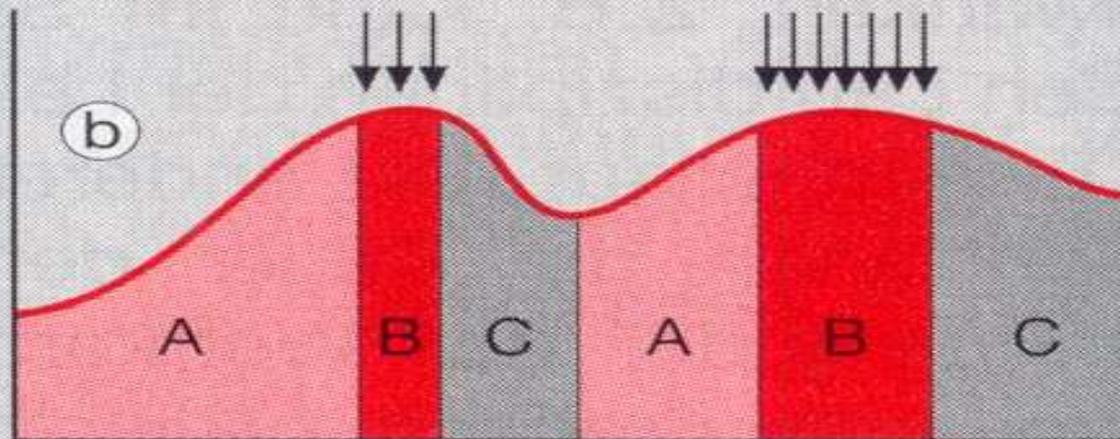
Period	U16	U18	U20	U23
gPP 1	6 TE Gen. athletics 2 TE Endurance 1 TE Speed 3 TE Techn, Train.	7 TE Gen. athletics 3 TE Endurance 1 TE Speed 4 TE Techn, Train.	9 TE Gen. athletics 4 TE Endurance 1 TE Speed 4 TE Techn, Train. 2 TE Gen. Powertr.	10 TE Gen. athletics 4 TE Endurance 2 TE Speed 4 TE Techn, Train. 4 TE Gen. Powertr.
gPP 2	4 TE Gen. athletics 1 TE Endurance 2 TE Sprint/hurd. 5 TE Techn. Train	4 TE Gen. athletics 2 TE Endurance 2 TE Sprint/hurd. 6 TE Techn. Train 2 TE Gen. Powertr.	5 TE Gen. athletics 3 TE End/Speeden. 3 TE Sprint/hurd. 6 TE Techn, Train. 3 TE Gen. Powertr.	5 TE Gen. athletic 4 TE End/Speeden 3 TE Sprint/hurd. 8 TE Techn, Train. 5 TE Gen. Powertr
sPP	3 TE Gen Athletics 1 TE Endurance 2 TE Sprint/hurd. 7 TE Techn. Train.	3 TE Gen. athletics 2 TE Endurance 2 TE Sprint/hurd. 7 TE Techn. Train 2 TE Gen. Powertr.	4 TE Gen. athletics 3 TE End./Speeden 2 TE Sprint/hurd. 8 TE Techn. Train 2 TE Gen. Powertr. 1 TE Fast Powertr.	4 TE Gen. athletic 3 TE End./Speede 3 TE Sprint/hurd. 8 TE Techn. Train 3 TE Gen. Powertr 4 TE Fast Powertr
CP	1 TE Gen Athletics 2 TE Sprint/hurd. 3 TE Techn. Train. Competition	1 TE Gen. athletics 1 TE Speed-End. 1 TE Sprint/hurd. 3 TE Techn. Train Competition	1 TE Gen. athletics 1 TE Speed-End. 1 TE Sprint/hurd. 3 TE Techn. Train Competition	1 TE Gen. athletic 1 TE Speed-End. 1 TE Sprint/hurd. 3 TE Techn. Train 1 TE Powertr. Competition

Simple or double periodisation

shape



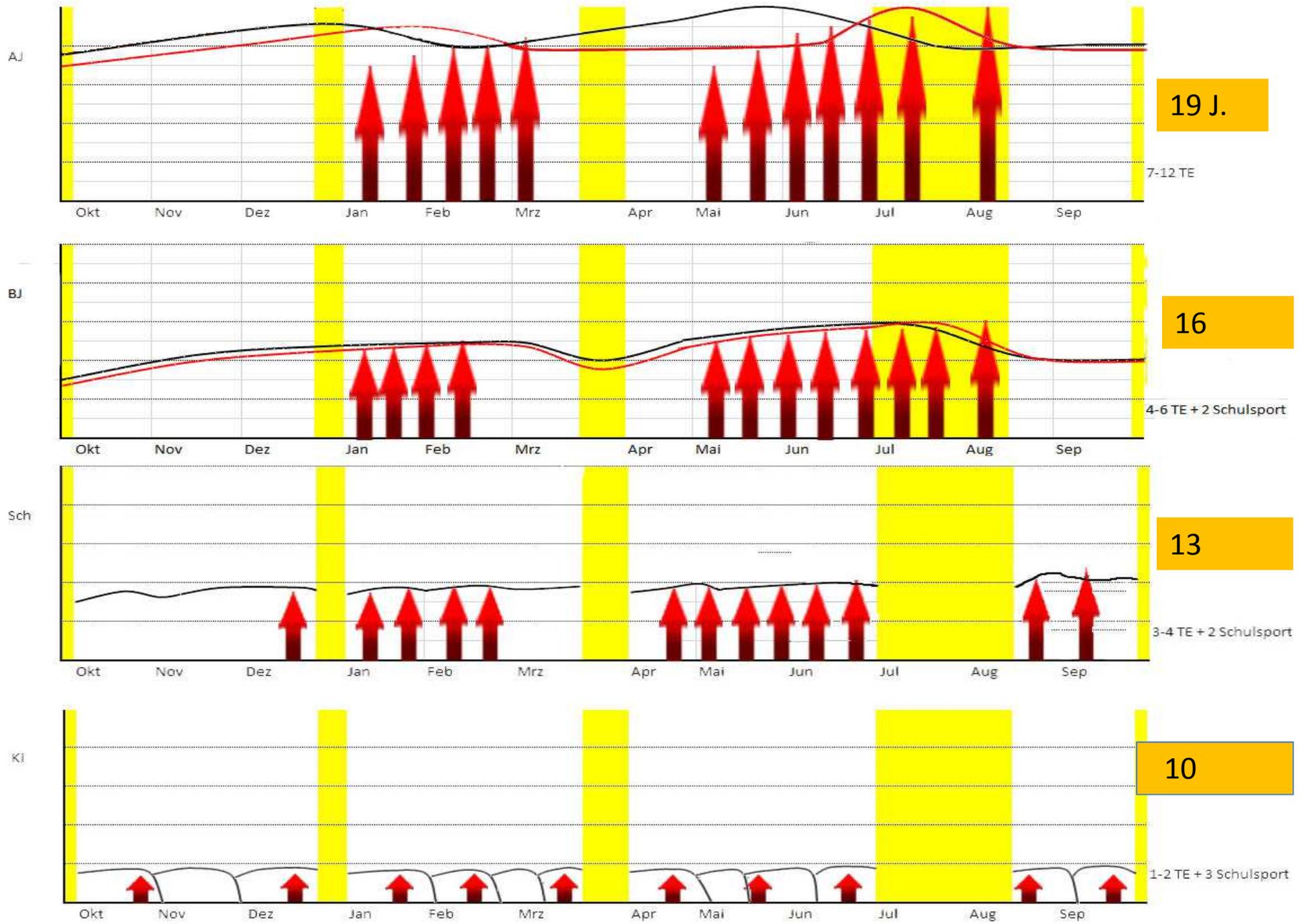
shape



Periodic structure of the training year

MAC	Periods	MEC	weeks	Topics in Training
1. MAC	1. gPP 1. part	1.	8	General preparation training
	1. gPP 2. part	2.	6	Event orientated built up training
	1. sPP	3.	6	Specific preparation training
	1. CP	4.	4	indoor-competition-series
2. MAC	2. gPP	5.	6	General built up training
	2. sPP	6.	6	Specific preparation training
	2. CP 1. part	7.	6	Outdoor competition series
	UWV	8.	4	Preparing the main competition
	2. CP 2. part	9.	3	Outdoor competition series with main comp.
	RP	10.	3	active Regeneration

MAZ = Macrocycle, MEZ = Mesocycle, MIZ = Mikrocycle (week); PP = Preparationperiode, g = general, s = specific, CP = Competitionperiod, UWV = direct preparing for the main competition (unmittelbare Wettkampf-Vorbereitung), RP = Regenerationperiod





Our training philosophy
for ltd:

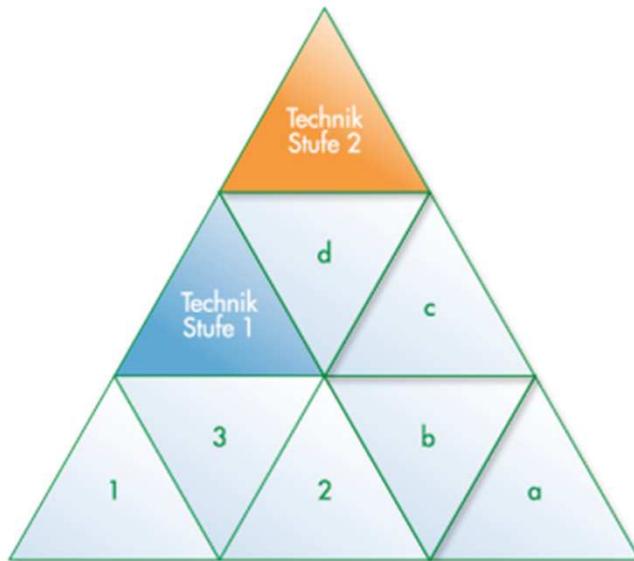
„Preparation training“

A photograph of three young men in athletic wear running on a dirt path during sunset. The scene is captured in a warm, golden light, with trees in the background. The runners are in profile, moving from left to right. The text 'YOUTH TRAINING ...' is overlaid in a grey box at the top left.

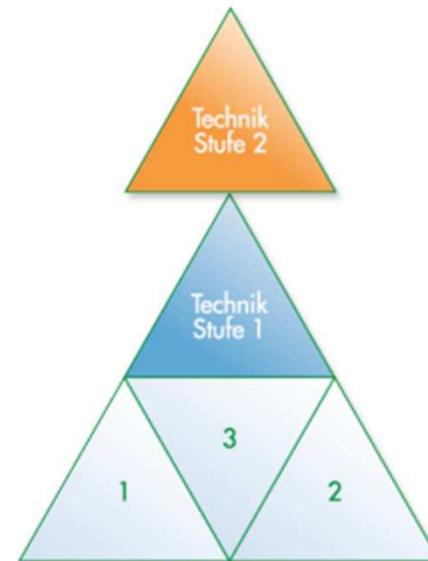
YOUTH TRAINING ...

... is preparation training,
not competition training!

COMPARISON PREPARATION- AND COMPETITION TRAINING

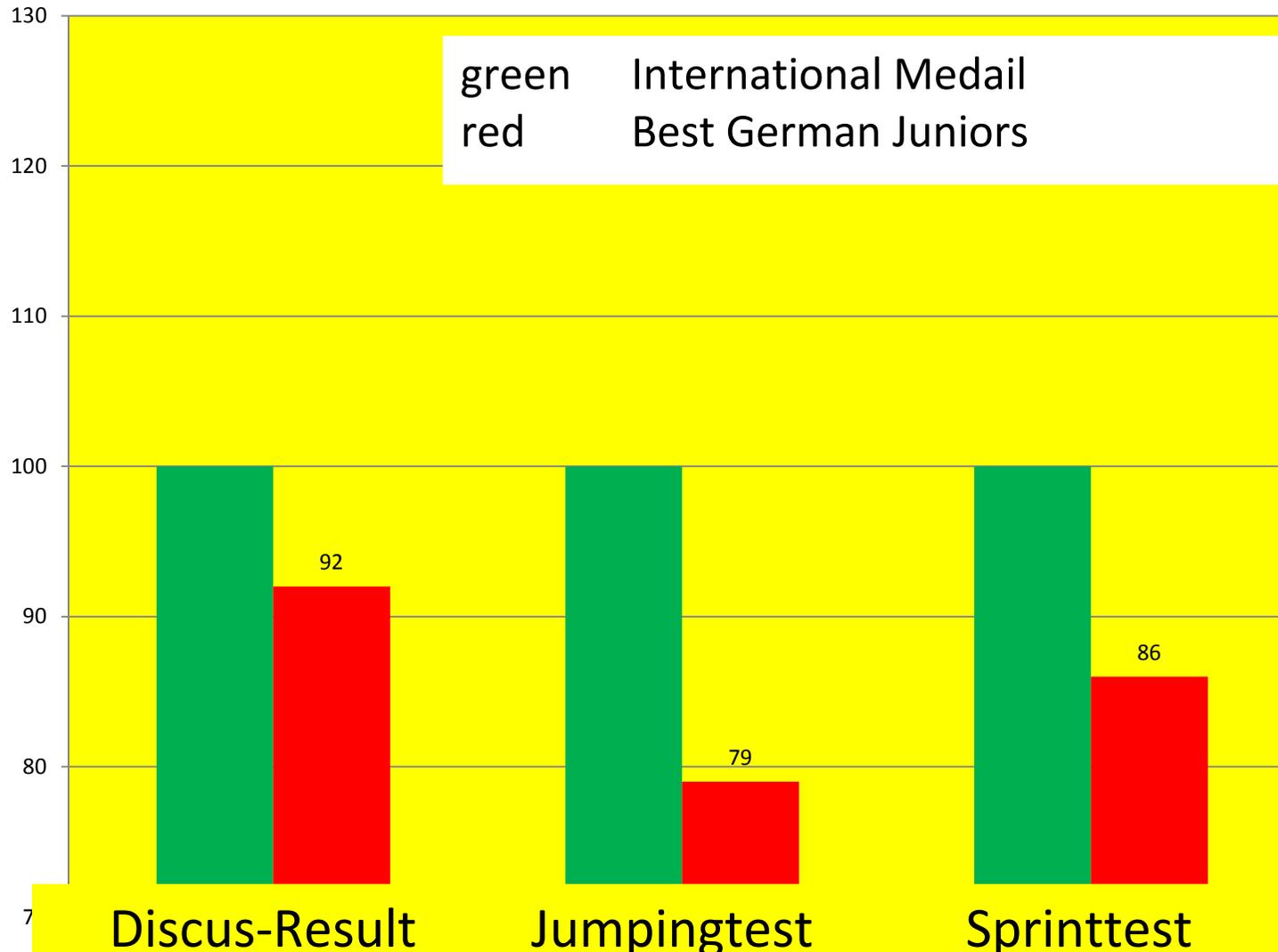


preparation Training builds a **stabile**
Base

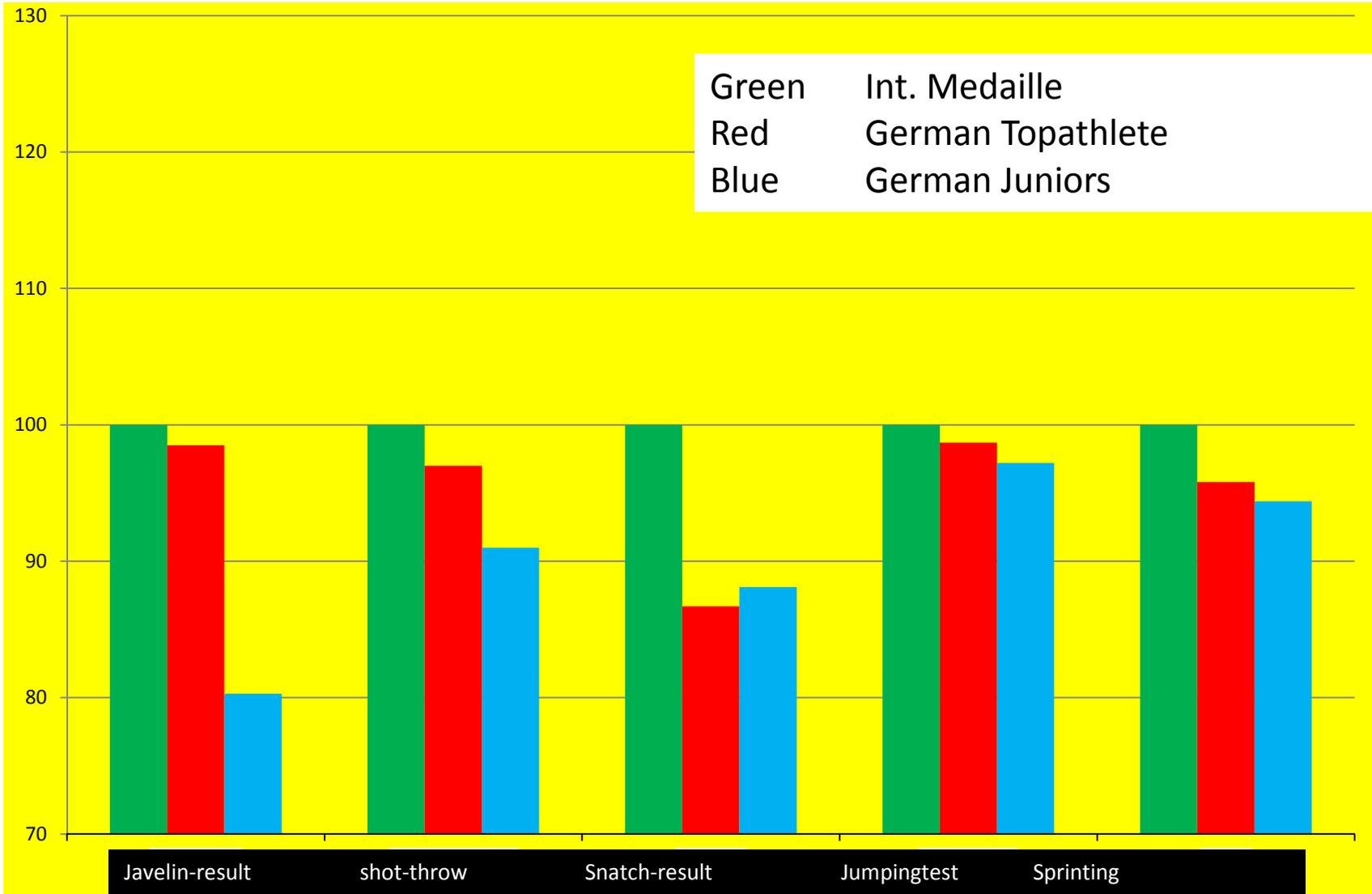


competition Training has a
weak **instabile** Base

German Women's discus-throwers 2000-2010 without good preparation

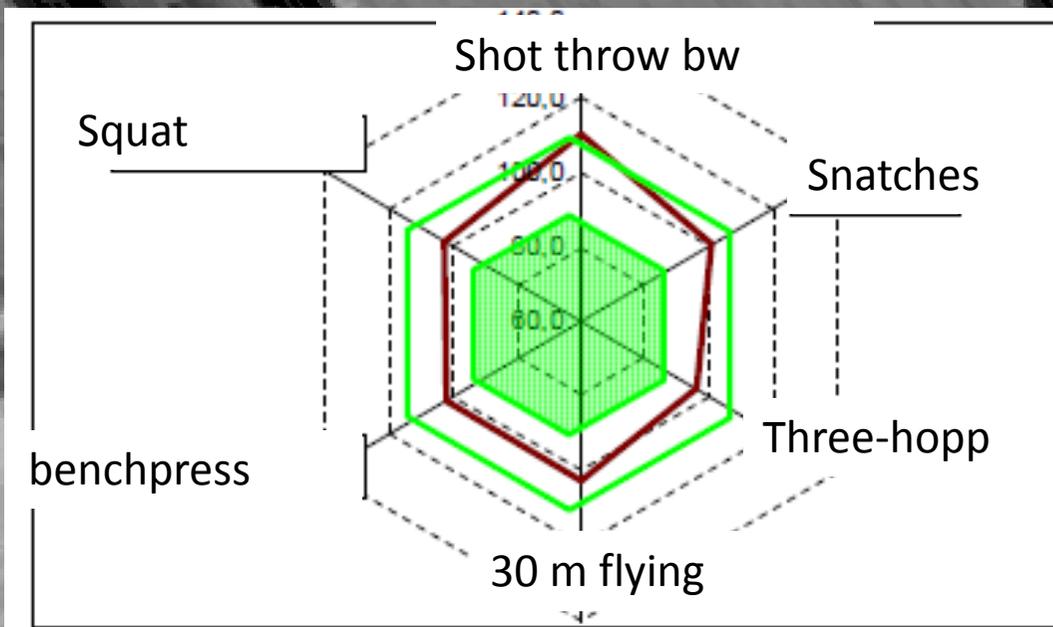


Javelin throwers with a good preparation



Training Controll in the Throwers System

	Shot throw bw.	snatch	Three-Hopp	30 m flying	Bench-press	Deep squat
Real	22,30	125,6	9,67	3,02	200,0	210,0
Real in %	110,3	101,1	95,7	102,6	103,0	102,7
Aim	20,20	124,2	10,10	3,10	196,0	204,5



source: IAT Leipzig

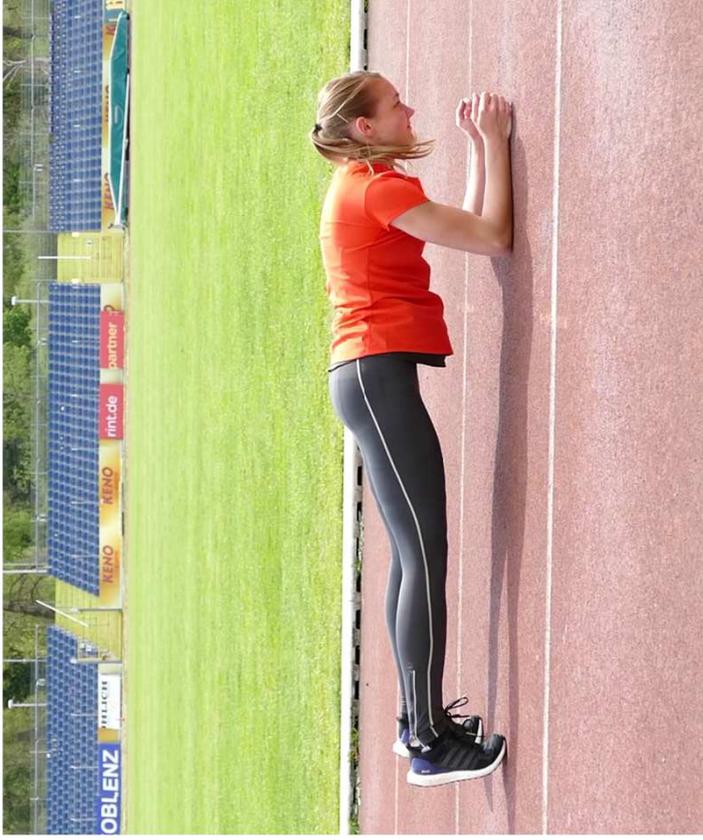
A good athlete needs more than the combined event techniques:

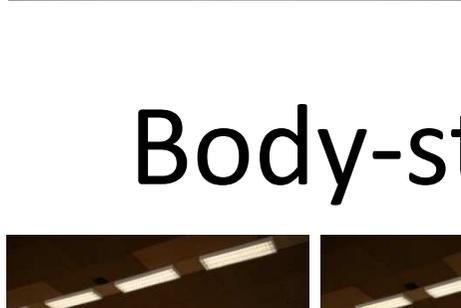
- Flexibility by Stretching, Gymnastics
- Versatility by Technique of other sports and games
 - Acrobatics, general athletics, weightlifting, Skiing (downhill), ...
 - Basketball, handball, volleyball, table tennis ...
- General endurance by Endurance sport techniques
 - Bicycling
 - Inlineskating, Skiing (cross country)
 - Swimming,
 - climbing
- general coordinative skills like rhythm, balance, ...

Body stabilisation circuit

2-3 x 10-15 exercises 30/20
= 15-25 min muscle work







Body-strength



Acrobatics - stabilisation



Medicine ball



Endurance: Why not in competitions?

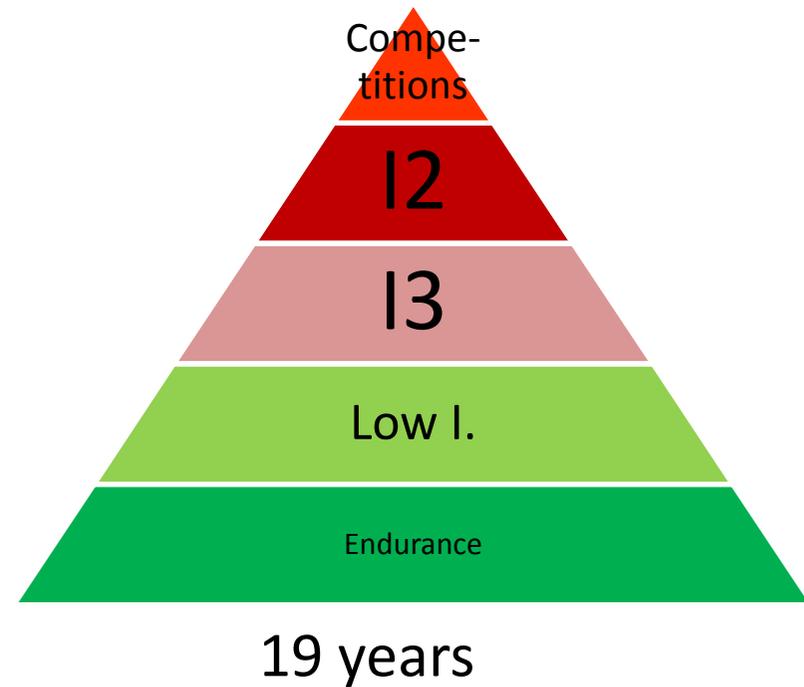
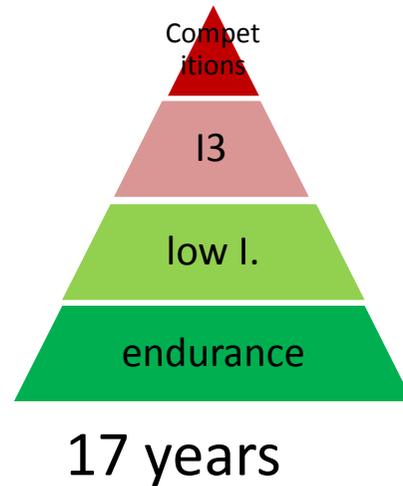
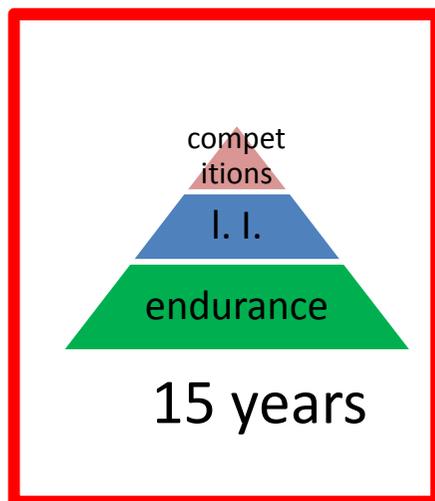




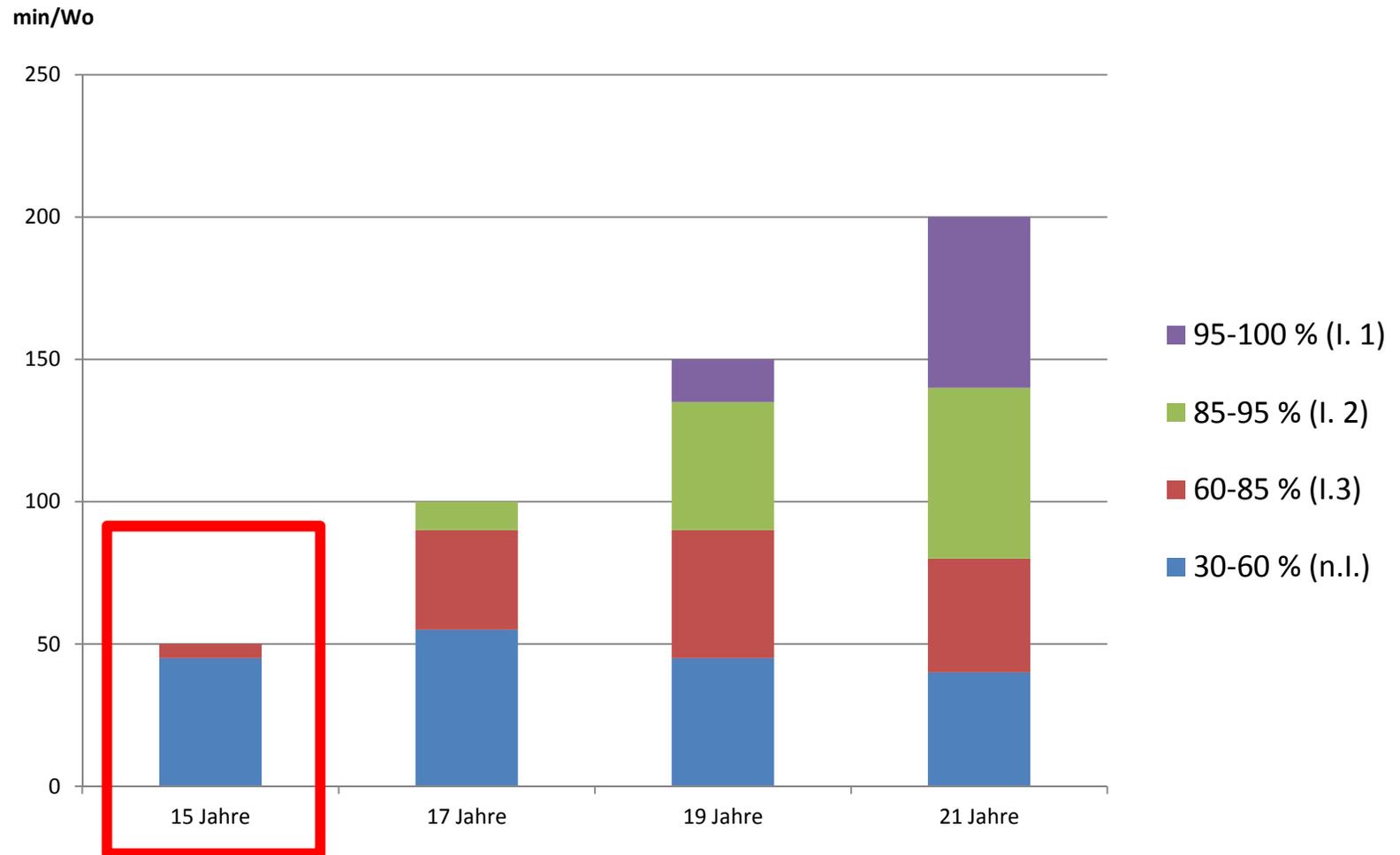
Classes of Intensities

	Low Intensity	I3	I2	I1
Per cent by actual maximum	-70 %	70- 85 %	85-95 %	95 – 100 %

Speed endurance training depending on age



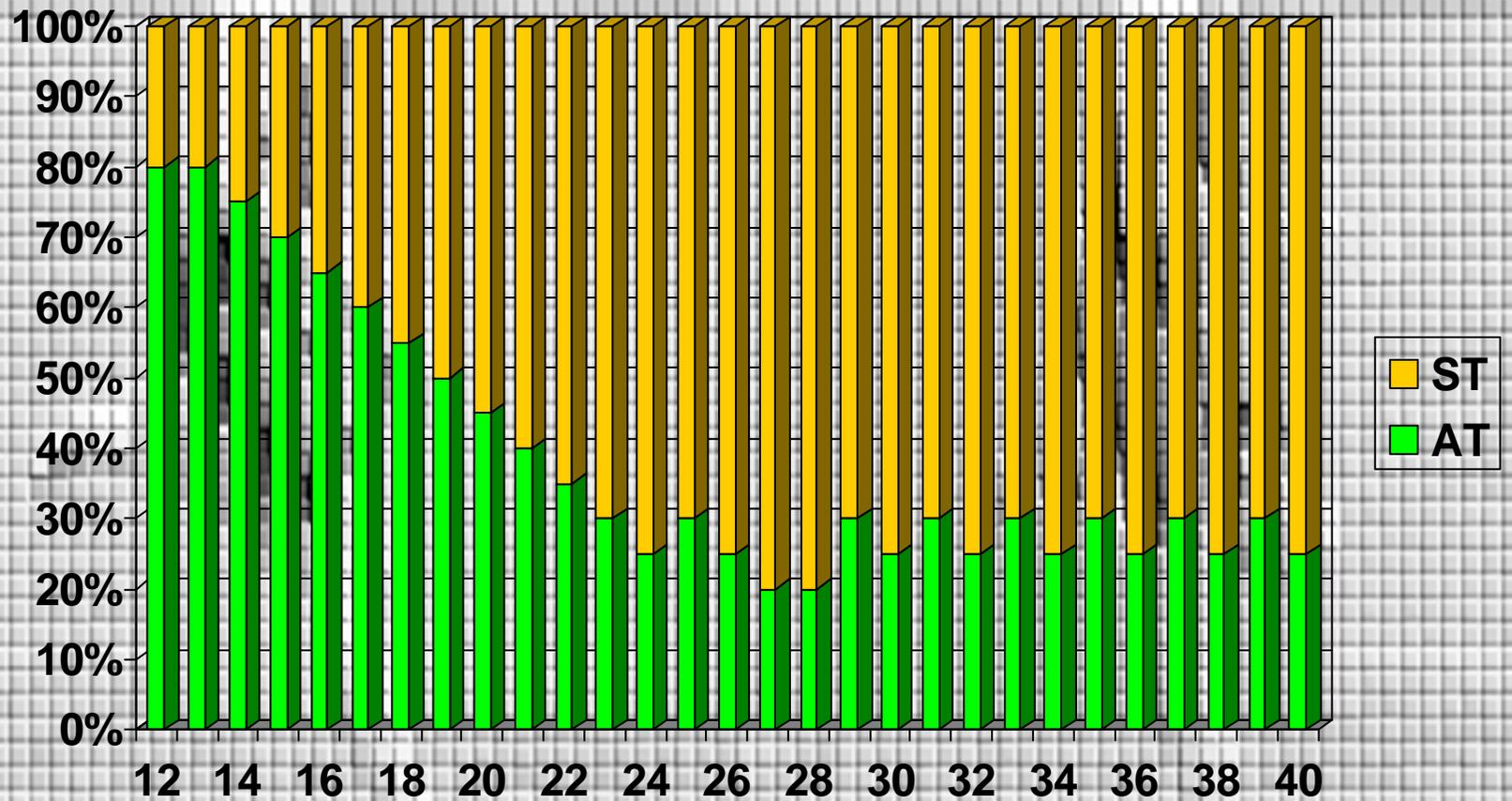
Weight training intensity depending on age



Sprint phases in different ages - Increase acceleration and speed! Not speed endurance!



Relation specific (ST) and general (AT) training means



Training examples 2



Training examples 3



Training examples 4



I prefer group training for young athletes



- Young people need the peer group
- The group „educates“ the single members
- Middle training intensity allows everybody to join
- The coach learns with the group
- Same training orders have different effects
- Later, there is time enough for individual training



Kids need a living group and sensitive coaches

Take-Home-Message: Kid athletics (6-11)

- Talent criteria:
 - Fun and motivation for training and comparisons
- Training
 - Different motoric experiences
 - Wide range of coordinative and velocity skills
 - Group training, group exercises
- “Competitions”
 - Games, relays, group events, ...

What should you do in Basic Training 11-15 years?

- Talent criteria:
Quickness, coordination and velocity in sprint, jumps, throws
- Training
Main techniques and coordination in athletics techniques and in other basic sports (gymnastics, weight lifting, basketball ...)
Do a lot of general training (>80 %)
First athletic status (body muscles strength)
Prophylactic strengthening typical weak points

Competitions

Different events / sports

What should you do in Build-up training 15-19?

- Talent criteria
 - Look for talents in other event groups, other sports
- Training
 - Specialisation first on event group, later event
 - Develop the fine form of the important techniques and the finest form of the main event technique
 - Do still a lot of general training
 - Improve the special training to 30 %, later 40 %
- Competition
 - Concentrate more and more on your event

Thank you
for your
attention!

Are there
Questions?

