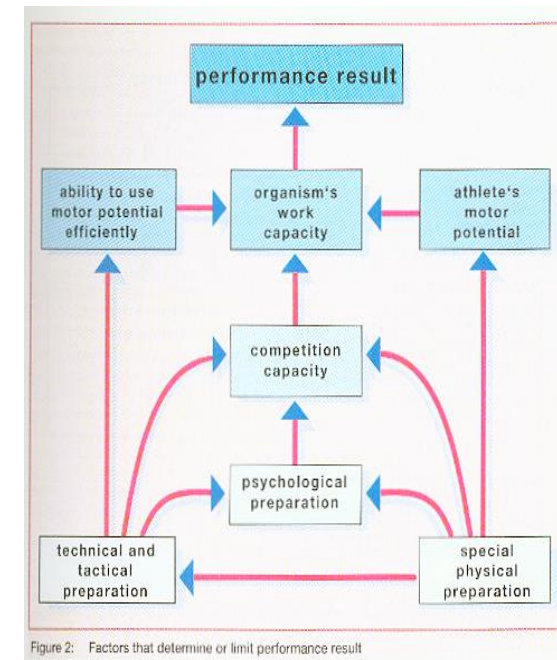


بازنمایی (پایش) برنامه تمرین

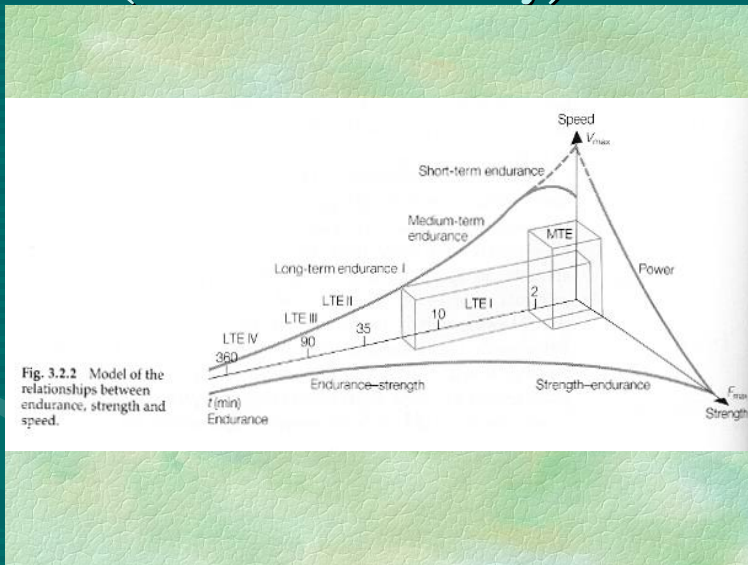


حمید رجبی
استاد دانشگاه خوارزمی
تابستان 1400

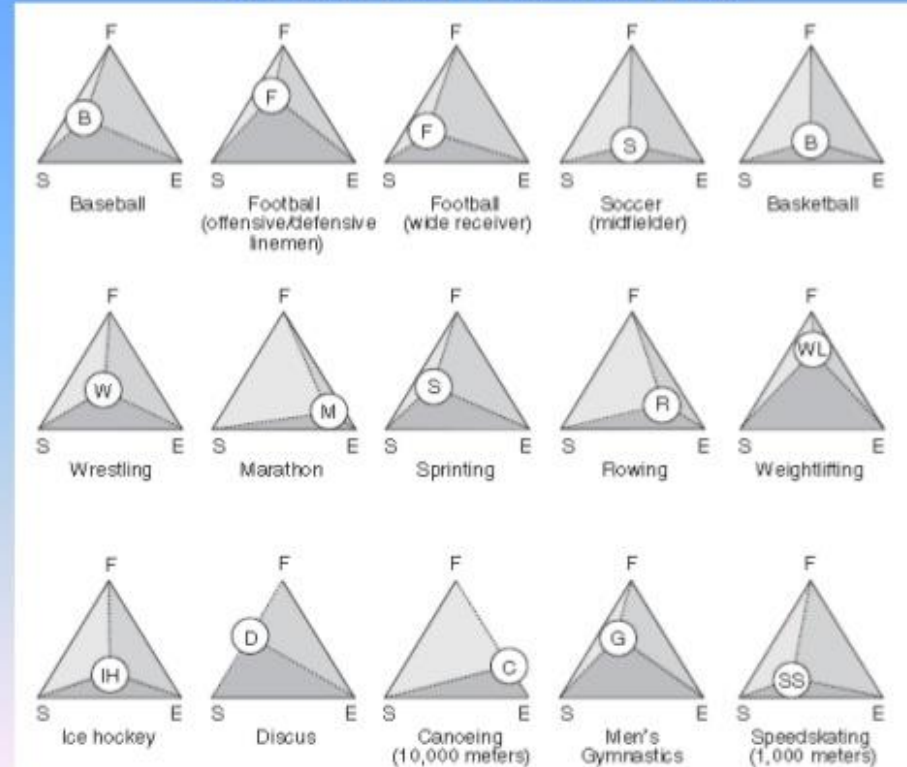


INTEGRATED OR COMPREHENSIVE TRAINING=TOTAL FACTORS TRAINING

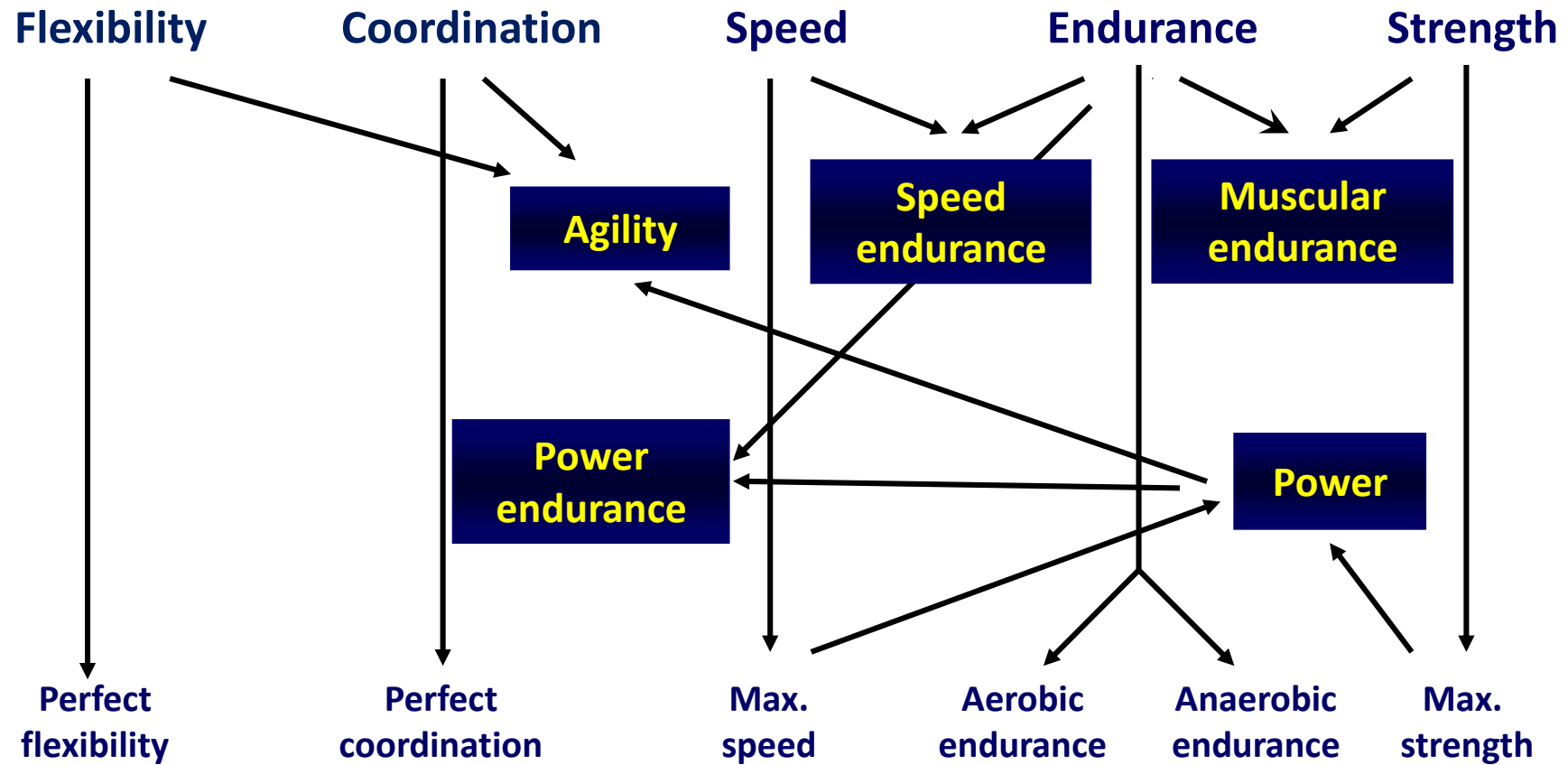
Specificity in training adaptation (bio motor ability)



BIOMOTOR ABILITIES



Bio-motor abilities



نیازهای بیوانرژی

Aerobic and Anaerobic Energy Systems in Sports

TABLE 21.1 The Predominant Energy Systems for Selected Sports			
% ATP CONTRIBUTION BY ENERGY SYSTEM			
Sport/Activity	ATP-PC	Glycolysis	Aerobic
Baseball	80	15	5
Basketball	80	10	10
Field hockey	60	20	20
Football	90	10	—
Golf (swing)	100	—	—
Gymnastics	90	10	—
Ice hockey:			
Forwards/defense	80	20	—
Goalie	95	5	—
Rowing	20	30	50
Soccer:			
Goalie/wings/strikers	80	20	—
Halfbacks	60	20	20
Swimming:			
Diving	98	2	—
50 meters	95	5	—
100 meters	80	15	—
200 meters	30	65	5
400 meters	20	40	40
1,500 meters	10	20	70
Tennis	70	20	10
Track and field:			
100/200 meters	98	2	—
Field events	90	10	—
400 meters	40	55	5
800 meters	10	60	30
1,500 meters	5	35	60
5,000 meters	2	28	70
Marathon	—	2	98
Volleyball	90	10	—
Wrestling	45	55	—

From E. L. Fox and D. K. Mathews, *Interval Training: Conditioning for Sports and General Fitness*. Copyright © 1974 Saunders College Publishing, Orlando FL. Reprinted by permission of the author.

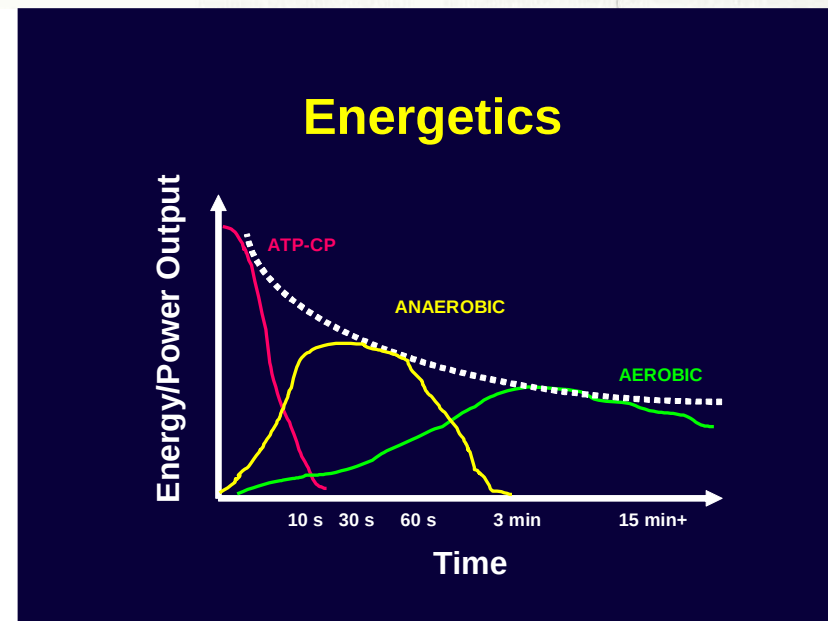
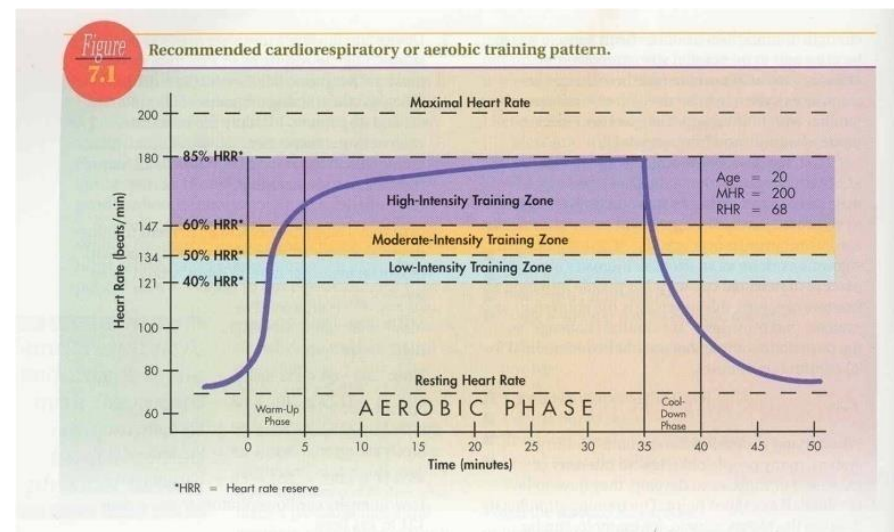
Sport	ATP-PCr & Glycolysis	Glycolysis & Oxidative	Oxidative
Basketball	60	20	20
Fencing	90	10	0
Field Events	90	10	0
Golf swing	95	5	0
Gymnastics	80	15	5
Hockey	50	20	30
Rowing	20	30	50
Running (distance)	10	20	70
Skiing	33	33	33
Soccer	50	20	30
Swimming (distance)	10	20	70
Swimming (50m freestyle)*	40	55	5
Tennis	70	20	10
Volleyball	80	5	15

Taken from Foss ML and Keteyian S. (1998) *The Physiological Basis of Exercise & Sport: 6th Edition*.

* Stager JM and Tanner DA. (2005) *Swimming: 2nd Edition*.

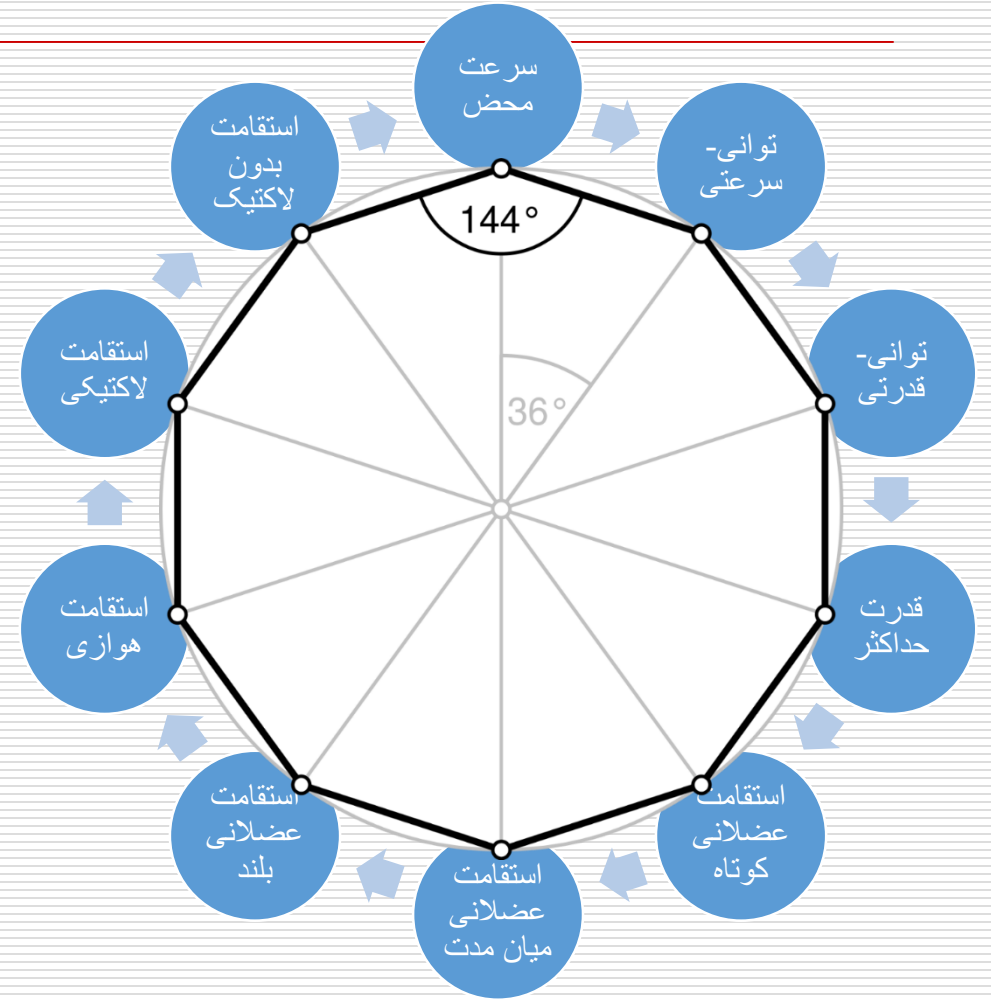
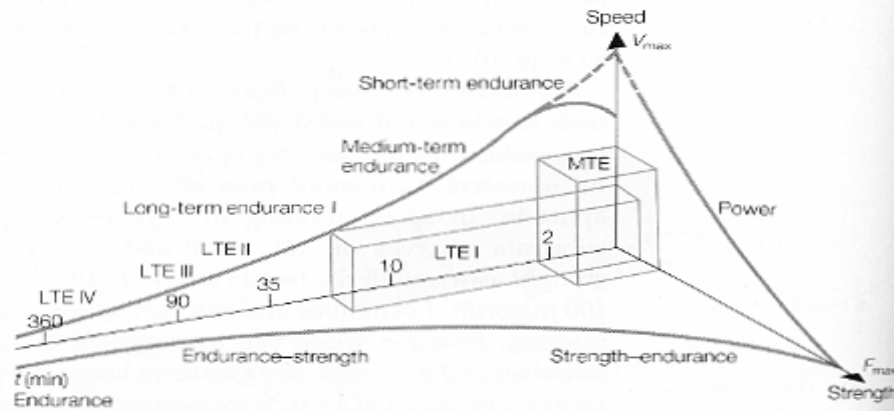
نیازهای انرژی (بیوانرژی)

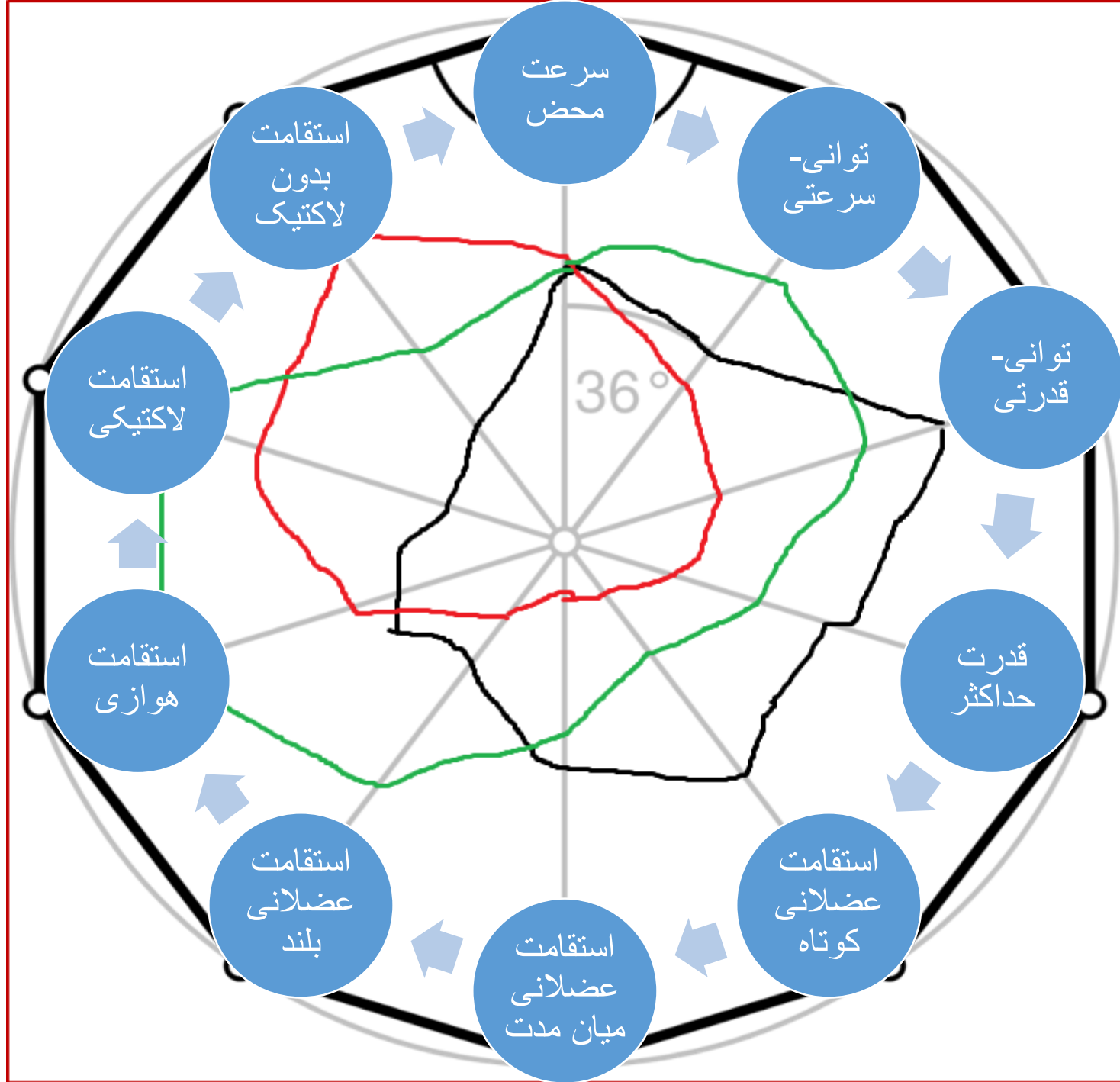
- 1- توان بی هوازی بدون لاکتیک (3-5 ثانیه)
- 2- ظرفیت بی هوازی بدون لاکتیک (10-15 ثانیه)
- 3- توان بی هوازی با لاکتیک (20-30 ثانیه)
- 4- ظرفیت بی هوازی با لاکتیک (45-70 ثانیه)
- 5- توان هوازی (2-5 دقیقه)
- 6- آستانه بی هوازی (30 دقیقه)
- 7- آستانه هوازی (بیش از 30 دقیقه)



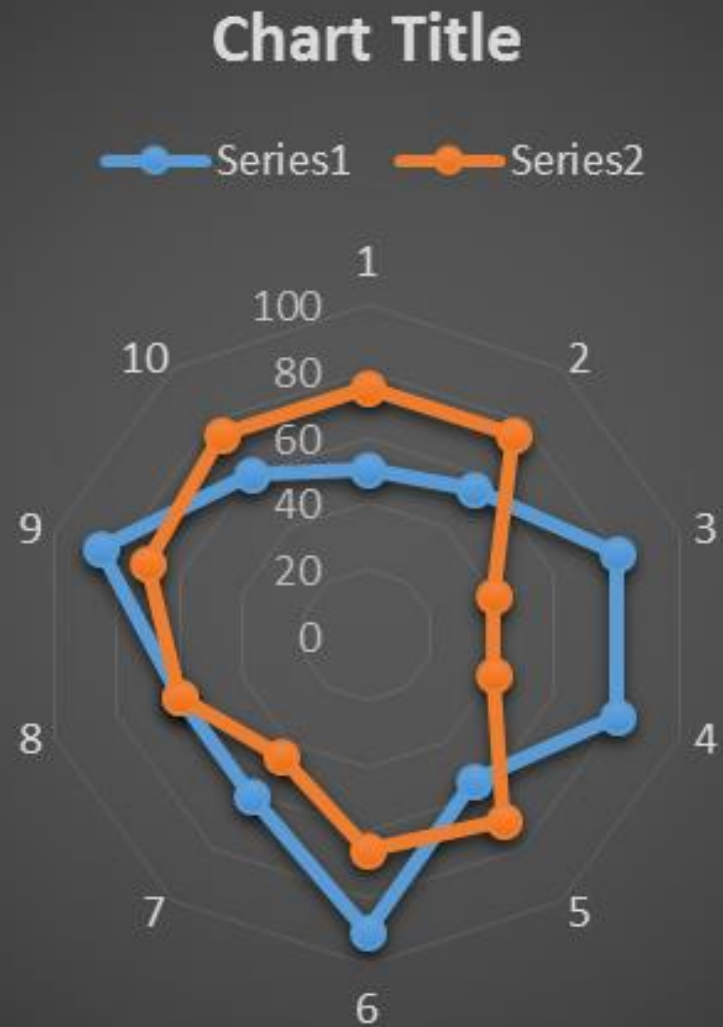
تعیین نیازهای زیست حرکتی

Specificity in training adaptation (bio motor ability)

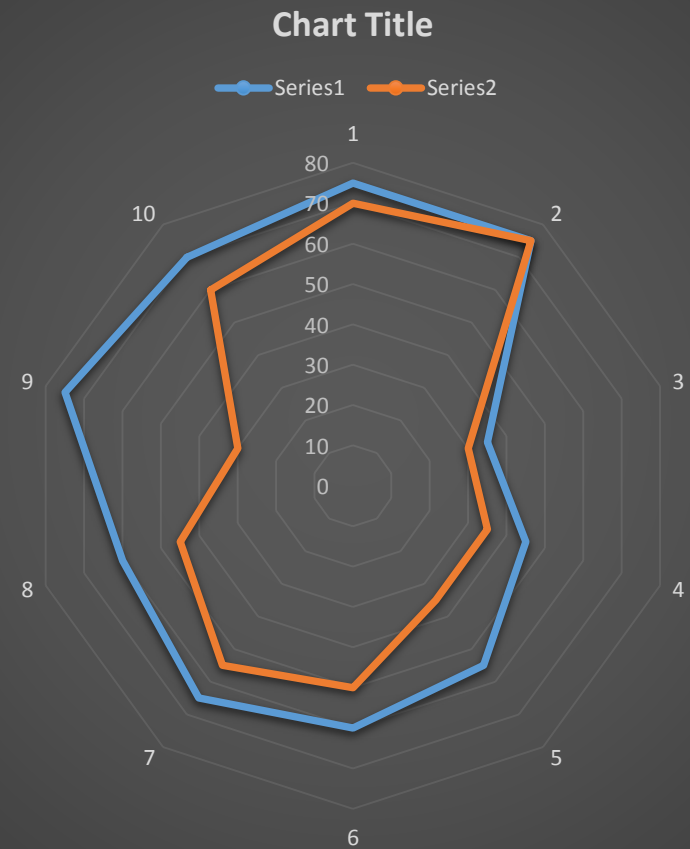




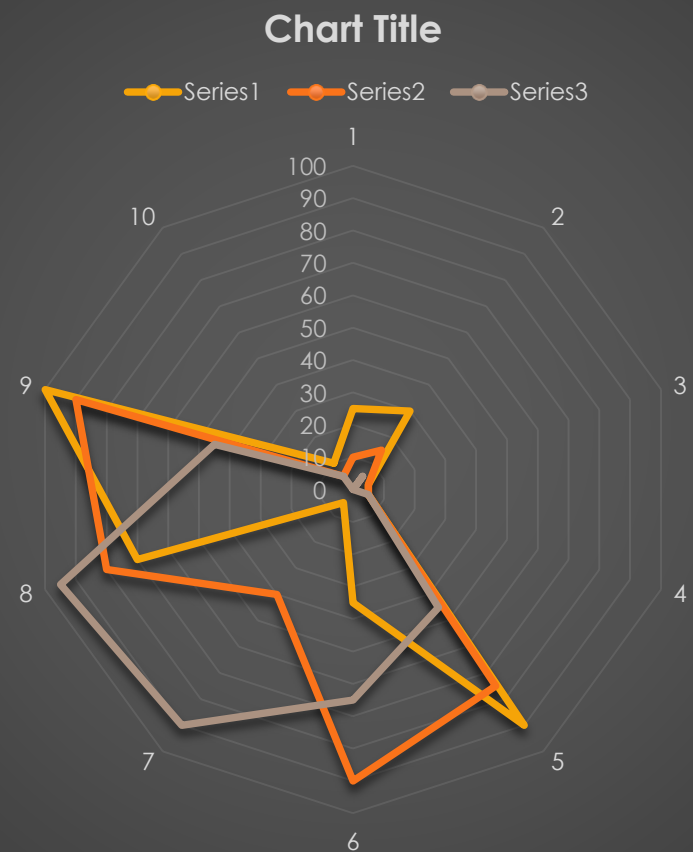
جودو و تڪواندو



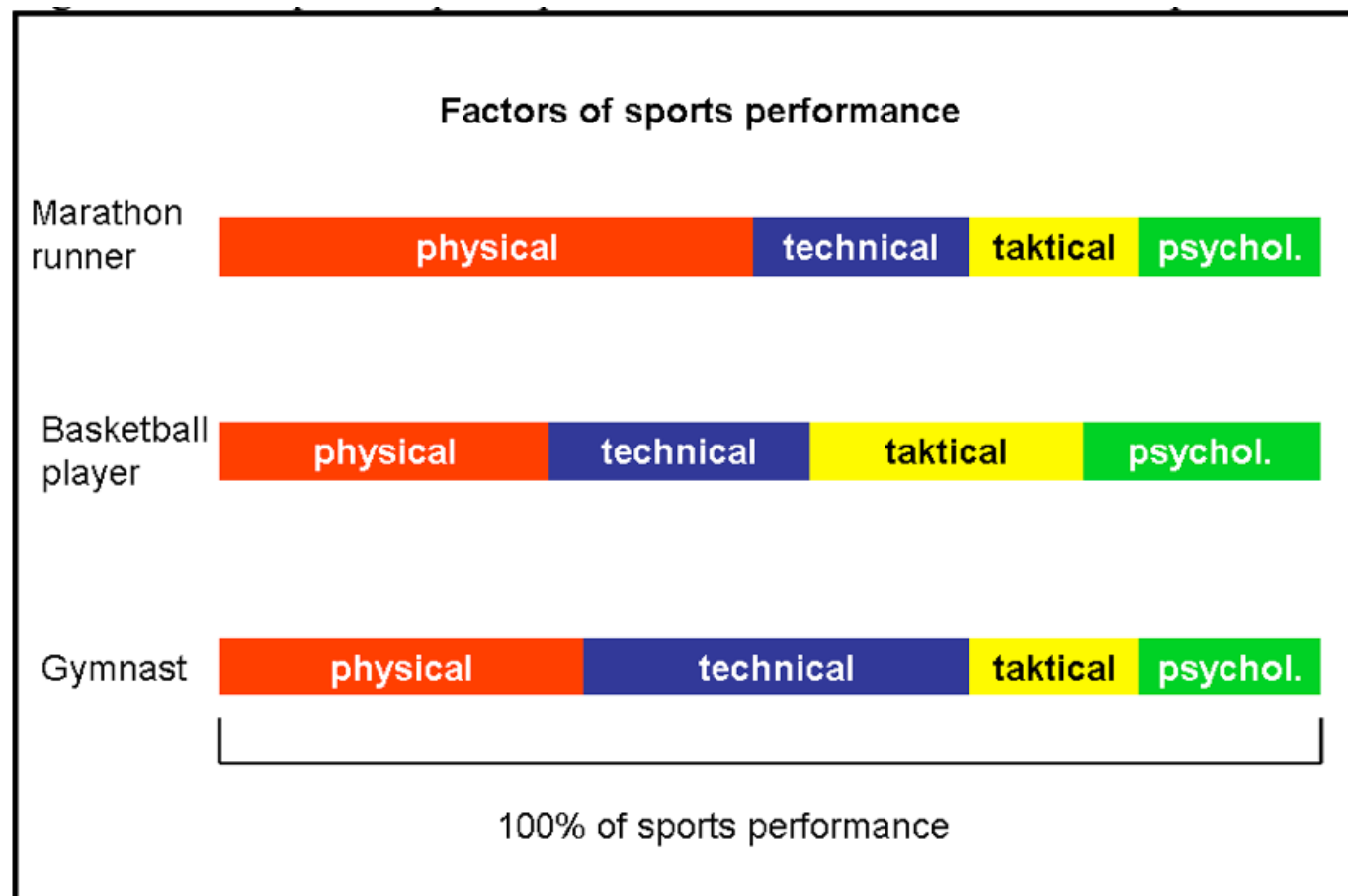
بِسْكَتَبَال و وَاَلِيْبَال



دوی 800 و 1500 و ماراټون



نیازهای مهارتی و تاکتیکی



تعیین عوامل مؤثر در عملکرد

با در نظر گرفتن عوامل بیست گانه و میزان اهمیت آن ها

تعیین عوامل مؤثر در عملکرد

با در نظر گرفتن عوامل بیست گانه و میزان اهمیت آن ها

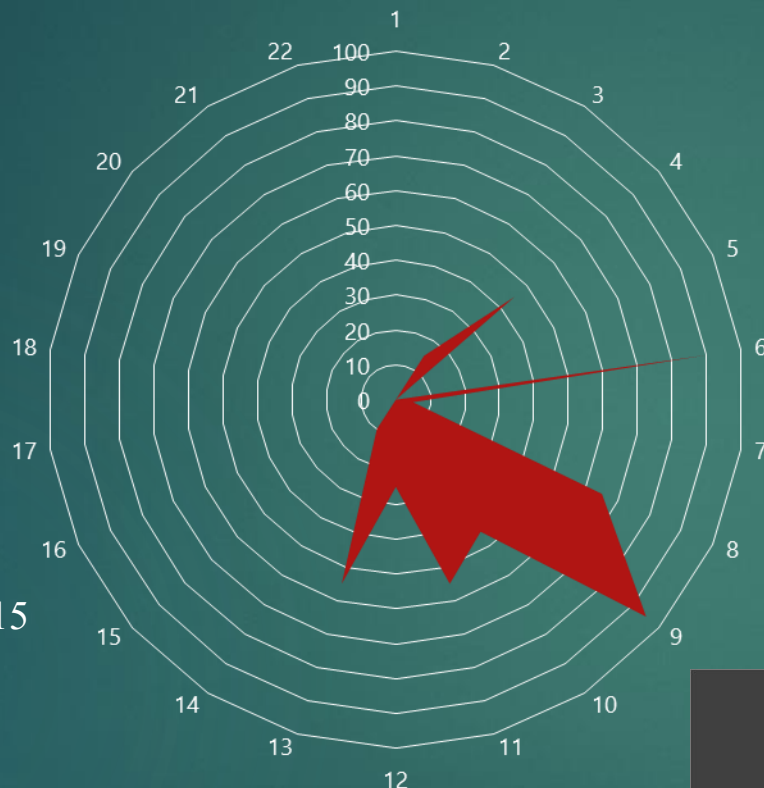
	آمادگی جسمانی	تعریف	کارآیی مربوط	حیا تی 100%	خیالی مهم 75%	مهم 50%	لازم 25%	کم اثر زیر 25%
1	توان بی هوازی بی لاکتیک A lactic Anaerobic Power	توانایی کل عضلات در تولید نیرو باسرعت زیاد ، در حرکات کوتاه انفجاری، برای دوره زمانی کوتاه	اجرای فعالیتهای شدید ، کوتاه مدت حضور اکسیژن و بدون تجمع زیاد اسید لاکتیک					
2	توان بی هوازی با لاکتیک Lactic Anaerobic Power	توانایی کل عضلات در تولید نیروی نسبتا زیاد در حرکات کوتاه انفجاری برای دوره زمانی متوسط	اجرای فعالیتهای شدید ، در شرایط بدون اکسیژن همراه با تجمع اسید لاکتیک					
3	ظرفیت بی هوازی بی لاکتیک A lactic Anaerobic Capacity	کل مقدار انرژی تولید شده در یک فعالیت بیهوازی کوتاه مدت	ظرفیت تولید انرژی بدون حضور اکسیژن و بدون تجمع زیاد اسید لاکتیک					
4	ظرفیت بی هوازی با لاکتیک Lactic Anaerobic Capacity	کل مقدار انرژی تولید شده در یک فعالیت بی هوازی با لاکتیک	اجرای بیشترین فعالیت ، بدون حضور اکسیژن همراه با تجمع اسید لاکتیک					
5	توان هوازی Aerobic Power	توانایی فرد برای بیشترین دریافت ، انتقال و مصرف اکسیژن در واحد زمان	اجرای فعالیتهای طولانی با دریافت ، حمل و مصرف سریع اکسیژن توسط عضلات					
6	استقامت هوازی Aerobic Capacity	توانایی اجرای فعالیت های هوازی و حفظ آن برای مدت طولانی	توانایی اجرا ی تمرینات هوازی و حفظ آن در مدت زمان طولانی					
7	قدرت بیشینه Maximum Strength	حد اکثر نیرویی که برای یک بار توسط گروهی از عضلات ایجاد می شود	بلند کردن بیشترین وزنه در یک حرکت					
8	استقامت در قدرت (استقامت عضلانی) Strength Endurance	توانایی در کاربرد قدرت و نگهداری این توانایی برای مدت نسبتا طولانی	اجرای فعالیتهای با نیروی زیر بیشینه و حفظ آن در مدت نسبتا زیاد					
9	سرعت بیشینه Maximum Speed	توانایی انتقال بدن یا ، یا بخشی از آن ، از نقطه ای به نقطه ای دیگر در کمترین زمان	طی مسافت کم در کمترین زمان					
10	چابکی Agility	توانایی بدن در شروع انفجاری حرکت ، توقف ، تغییر مسیر و شتاب گرفتن ؛ همراه با حفظ کنترل و حد اقل کاهش در سرعت	اجرای متوالی فعالتهای ناگهانی همراه با کنترل و حد اقل کاهش در سرعت					

	آمادگی جسمانی	تعریف	کارآیی مربوط	حیا تی 100%	خیالی مهم 75%	مهم 50%	لازم 25%	کم اثر زیر 25%
11	تعادل Balance	توانایی حفظ مرکز ثقل بدن در محدوده سطح اتکا در حالت های ایستا و پویا	اجرای فعالیتهای همراه با حفظ تعادل در شرایط مربوط					
12	زمان عکس العمل Reaction Time	فاصله زمانی بین دریافت محرک تا اولین حرکت	شروع حرکت با پاسخ سریع به محرک					
13	انعطاف پذیری Flexibility	توانایی کاربرد عضلات در وسیع ترین دامنه حرکت آن ها به دور مفصل ها	اجرای فعالیتهای در دامنه حرکت مناسب برای اجرای مهارت ها					
14	توانی قدرتی Power strength	توانایی تولید نیروی نسبتا زیاد با سرعت هرچه بالاتر	اجرای حرکات سریع ورزشی که مقاومت در برابر حرکت نسبتا بالا است.					
15	توانی سرعتی Power speed	توانایی تولید سرعت بالا همراه با مقاومت های نسبتا سبک	اجرای فعالیت های انفجاری پرتابی ، پرتابی ، بلند کردن و گرفتن انفجاری که مقاومت در برابر آن نسبتا پایین است .					
16	استقامت در توان (استقامت در سرعت) Power Endurance	توانایی اعمال نیروی انفجاری بصورت تکراری یا در یک دوره زمانی کوتاه	اجرای فعالیت های انفجاری متوالی در یک دوره زمانی کوتاه					
17	هماهنگی عصبی عضلانی Neuro- Muscular Coordination	توانایی اجرای حرکات ترکیبی دست و پا ، بصورت روان و ظریف	اجرای فعالیتهای ترکیبی با اجزاء مختلف بدن بصورت هماهنگ					
18	آمادگی مغزی Brain Conditioning	توانایی اجرای مطلوب حرکاتی که نیاز به ادراک و شناخت دارند	اجرای مناسب فعالیت هایی که نیاز به سرعت تصمیم گیری ، تمرکز دقت و درکی موقعیت دارند					
19	تحمل لاکتات Lactate Tolerance	توانایی تحمل وجود لاکتات بالا در خون در فعالیت های بی هوازی لاکتیکی پشت سر هم یا ادامه فعالیت بی هوازی لاکتیکی	اجرای فعالیت های سرعتی تکراری با استراحت کوتاه و یا ادامه فعالیتهای بی هوازی بدون کاهش سرعت					
20	حجم عضلانی Muscle mass	برجستگی توده عضلانی	اجرای حرکاتی که اندازه حرکت در آنها مهم است					

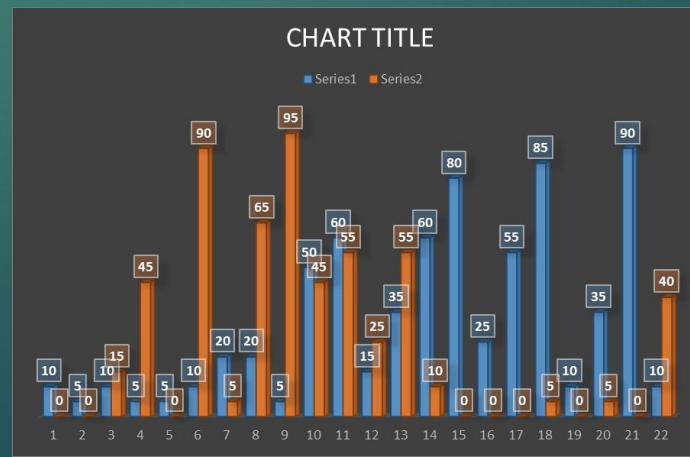
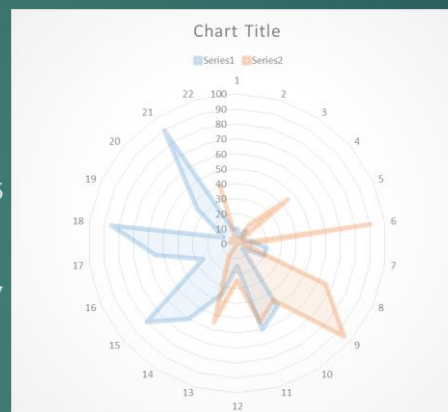
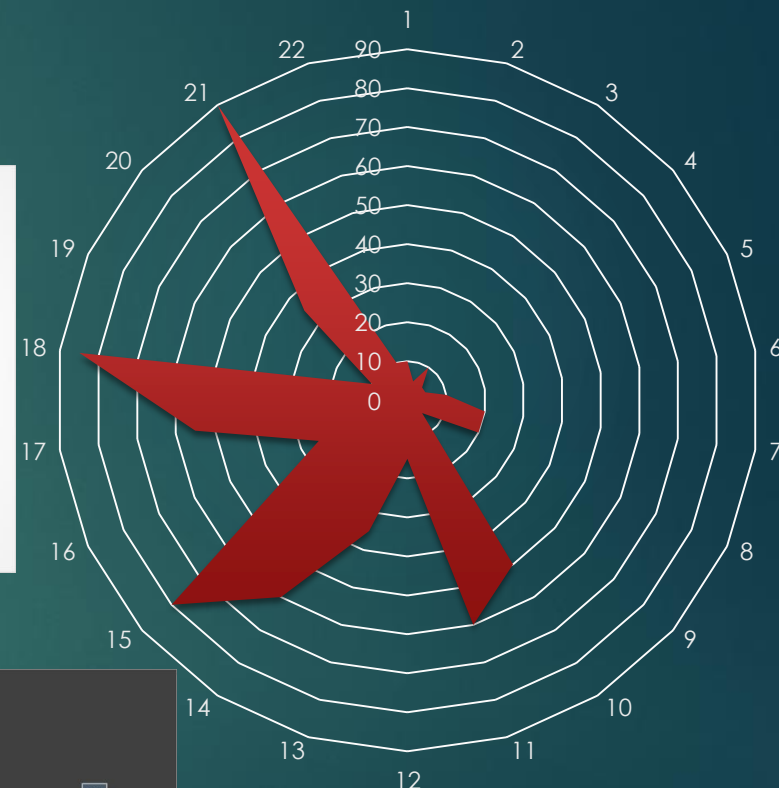
شنا 400 متر کرال سینه و پرتاب نیزه

- ▶ 1- زمان عکس العمل
- ▶ 2- سرعت عمل مغز
- ▶ 3- هماهنگی عصبی-عضلانی
- ▶ 4- تعادل
- ▶ 5- توانایی های ادراکی-حرکتی
- ▶ 6- سرعت محض
- ▶ 7- چابکی
- ▶ 8- چالاکی
- ▶ 9- توانی-سرعتی
- ▶ 10- توانی-قدرتی
- ▶ 11- قدرت حداکثر
- ▶ 12- توده عضلانی
- ▶ 13- انعطاف پذیری
- ▶ 14- استقامت عضلانی کوتاه
- ▶ 15- استقامت عضلانی میان مدت
- ▶ 16- استقامت عضلانی بلند
- ▶ 17- استقامت هوازی
- ▶ 18- توان هوازی
- ▶ 19- استقامت مغزی
- ▶ 20- توان لاکتیکی
- ▶ 21- تحمل لاکتیکی
- ▶ 22- استقامت در سرعت و توان

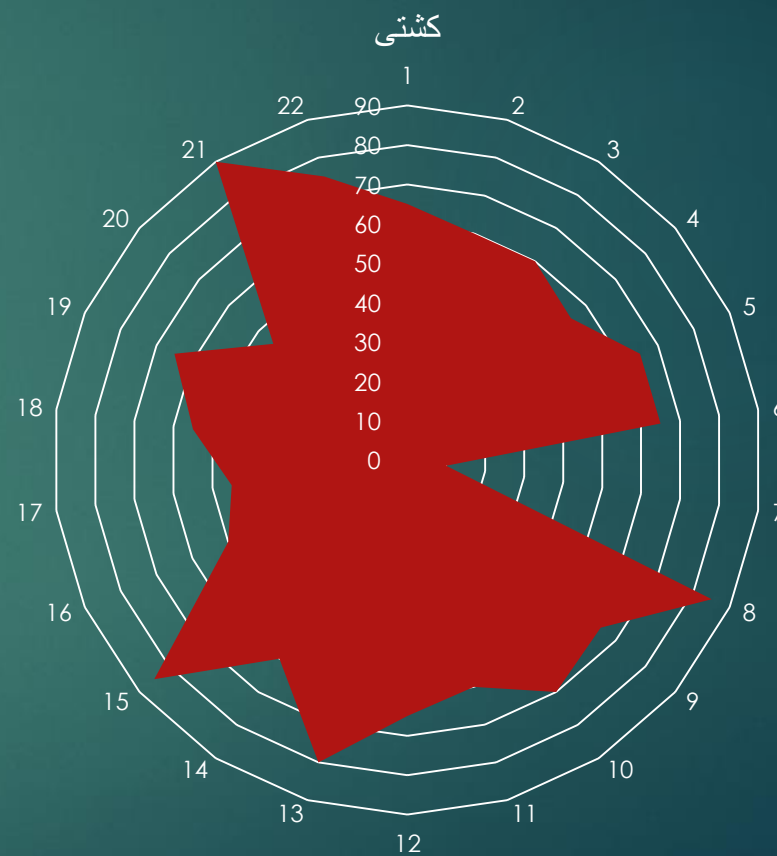
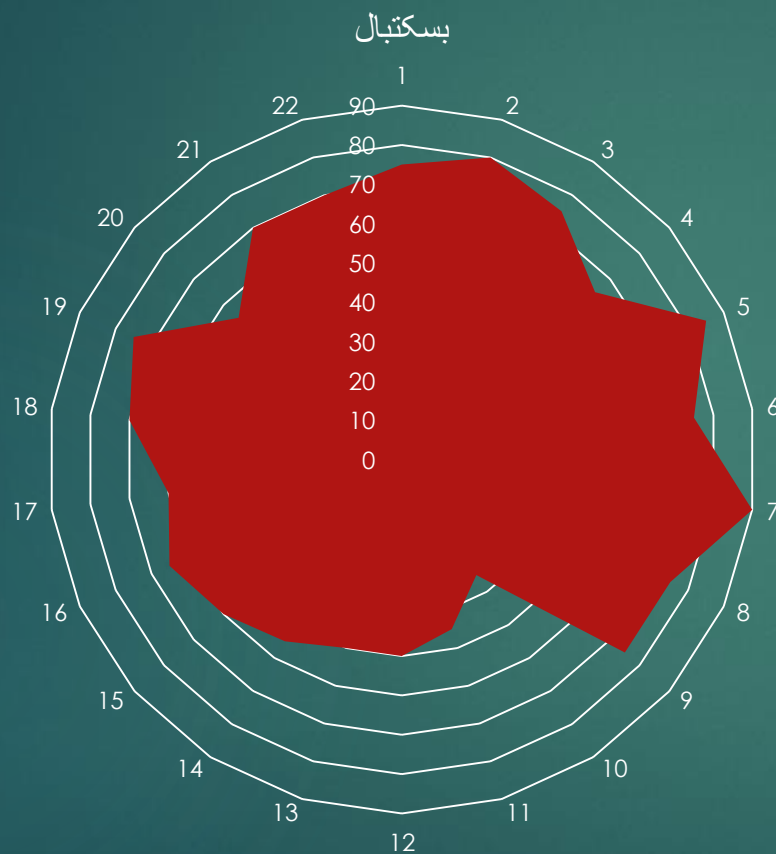
پرتاب نیزه



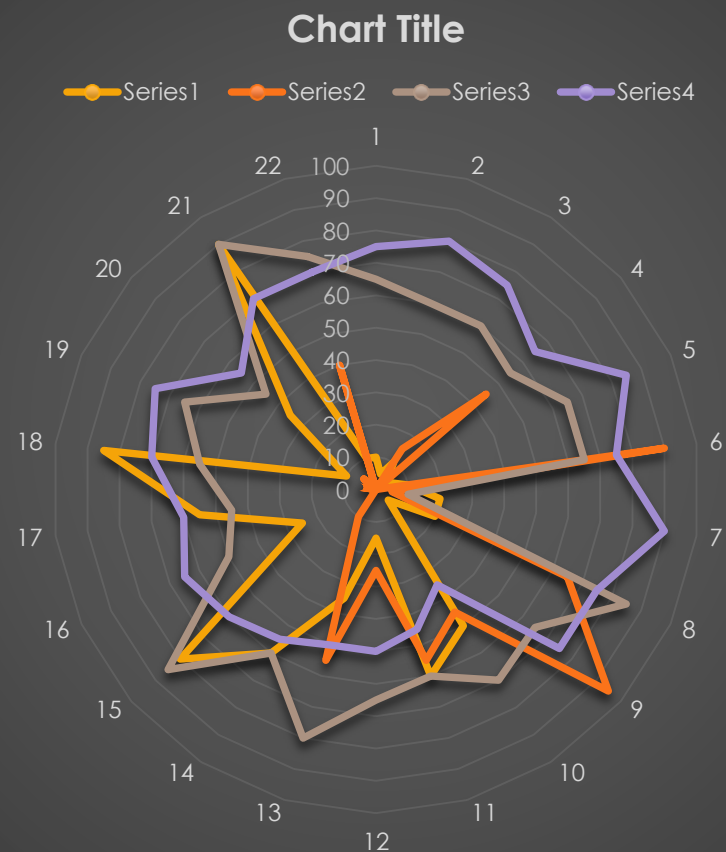
شنا 400 کرال سینه



کشتی سبک وزن و بسکتبال (آمادگی مغزی، عضلانی، ساختاری و متابولیکی)



شنا 400 کرال سینه، پرتاب نیزه، کشتی و بسکتبال



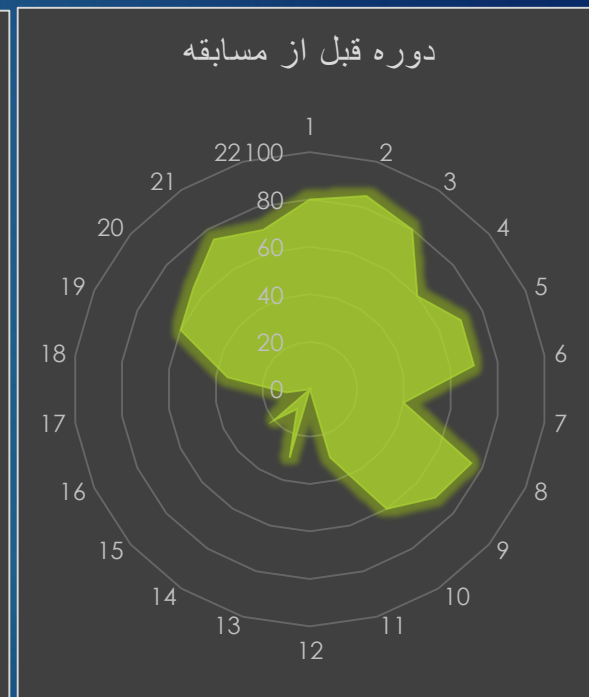
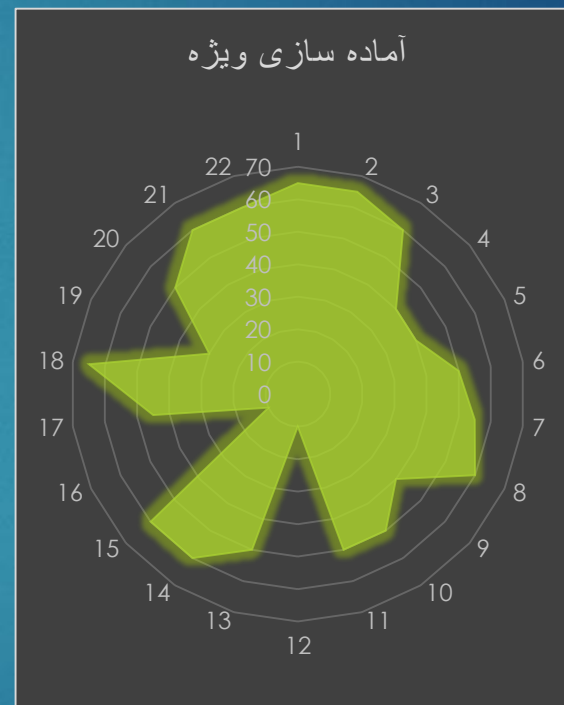
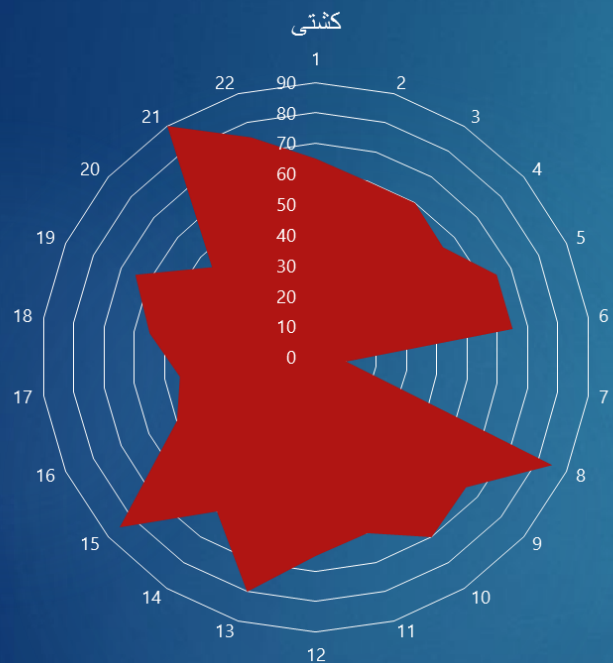


Periodization of Biomotor Abilities

	Preparatory		Competitive			Transition
	General preparatory	Specific preparatory	Pre -comp	Main competition		Transition
Strength	Anatomical adaptation	Maximum strength	Conversion -Power -Muscular endurance -Both	Maintenance	C	Compensation
Endurance	Aerobic endurance		-Aerobic endurance -Specific endurance (ergogenesis)	Specific endurance (ergogenesis)		Aerobic endurance
Speed	Aerobic & anaerobic endurance	-Alactic speed -Anaerobic endurance (ergogenesis)	-Specific speed * Alactic * Lactic * Speed endurance	-Specific speed -Agility -Reaction time -Speed endurance		

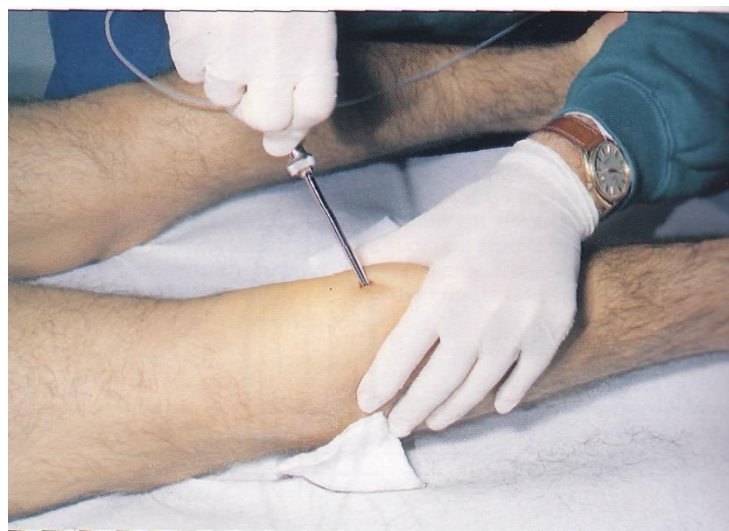
Periodization of main biomotor abilities

نیازهای تمرینی در فصول مختلف کشتی



بنابر این

- برای تعیین نیازهای ورزشی بر خورداری از دانش علم تمرین، فیزیولوژی ورزشی، حرکت شناسی و روانشناسی نیاز می باشد
- برای تعیین نیازهای ورزشی می توان به سوابق مستند موجود مراجعه کرد
- برای تعیین نیازهای ورزشی باید با تجهیزات مربوطه آشنا بود
- می توان با ارزیابی ورزشکاران موفق تا حدی به نیازهای ورزشی پی برد.



^aMulti-joint exercises are recommended for older adults and children.

^bPrograms for children and adolescents should be closely supervised by trained personnel.

Table 7.3 Guidelines for Designing Dynamic Resistance Training Programs

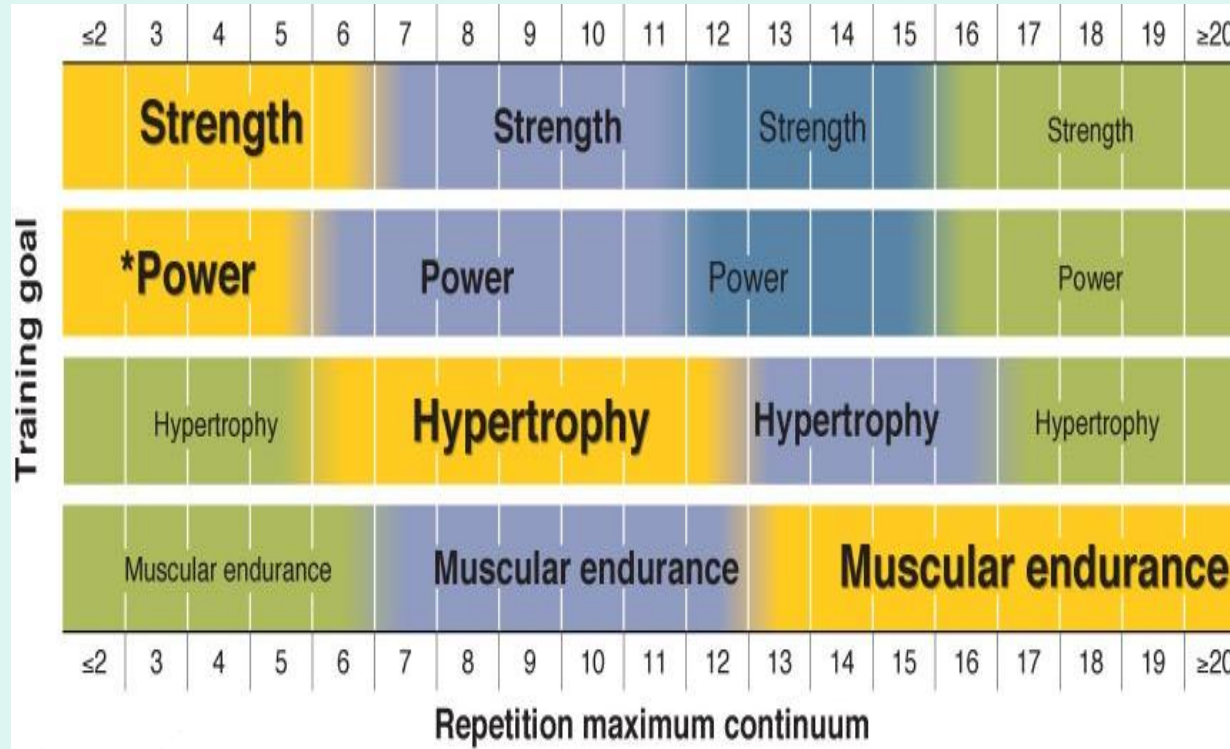
Type	Intensity	Repetitions	Sets	Frequency	Length of program
Strength (novice)	80-85% 1-RM or 6-8 RM	6-8	3	3	6 weeks or more
Strength (advanced)	80-90% 1-RM or 4-8 RM	4-8	5-6	5-6	12 weeks or more
Toning	60-70% 1-RM or 12-15 RM	12-15	3	3	6 weeks or more
Endurance	≤60% 1-RM or 15-20 RM	15-20	3	3	6 weeks or more
Hypertrophy (advanced)	70-75% 1-RM or 10-12 RM	10-12	5-6	5-6	12 weeks or more

Rest Period Length Assignments Based on the Training Goal

Training goal*	Rest period length
Strength	2-5 minutes
Power: Single-effort event Multiple-effort event	2-5 minutes
Hypertrophy	30 seconds-1.5 minutes
Muscular endurance	≤30 seconds

*Because there are occasions when the prescribed percentage of the 1RM for assistance exercises falls outside the range associated with the training goal (e.g., ≥8RM loads are recommended for assistance exercises as part of a muscular strength training program [6]), the strength and conditioning professional should examine the loads used for each exercise when assigning rest periods rather than generally applying the guidelines for a training goal.

متغیرهای تمرین مقاومتی



- شدت و تکرار
- سرعت انقباض
- زمان استراحت
- تکرار جلسات
- نوع انقباض
- فشار متابولیکی
- فشار مکانیکی

RPE Chart

Rate of Perceived Exertion

Training Zone

% MHR



10

Max Effort Activity

Feels almost impossible to keep going.
Completely out of breathe, unable to talk.

Zone 6

Neuromuscular / Power

94-100%

9

Very Hard Activity

Very difficult to maintain exercise intensity.
Can barely breath and speak a single word.

Zone 5

VO2max / Speed

89-94%

7-8

Vigorous Activity

On the verge of becoming uncomfortable.
Short of breath, can speak a sentence.

Zone 4

Anaerobic / Threshold

82-89%

4-6

Moderate Activity

Feels like you can exercise for hours.
Breathing heavily, can hold short conversation.

Zone 3

Stamina / Tempo

75-82%

2-3

Light Activity

Feels like you can maintain for hours.
Easy to breathe and carry a conversation.

Zone 2

Endurance / Aerobic

65-75%

1

Very Light Activity

Anything other than sleeping,
watching TV, riding in a car, etc.

Zone 1

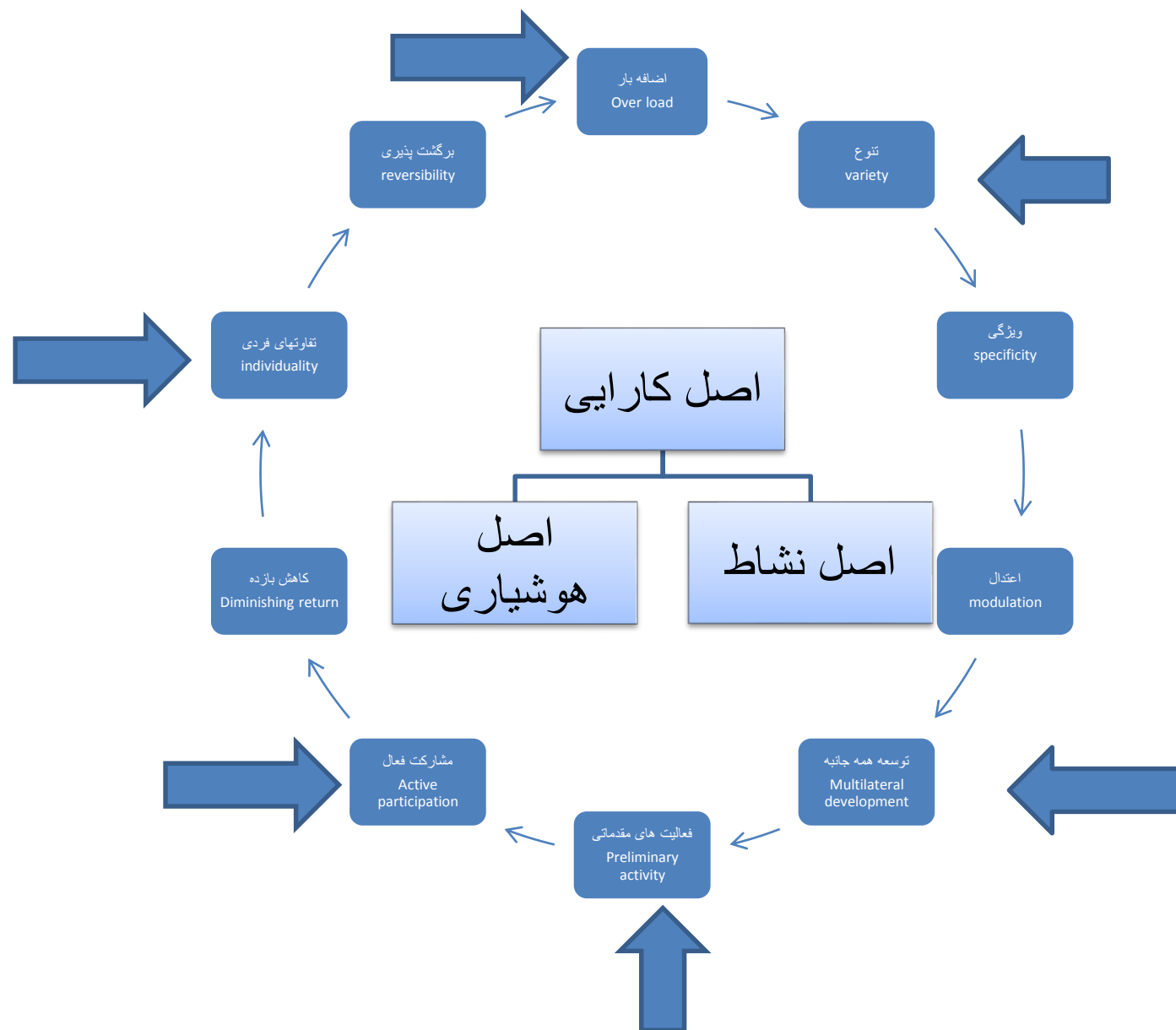
Recovery / Basic Endurance

60-65%

VARIABLE	STRENGTH	POWER	SPEED	HYPERTROPHY	MUSCULAR ENDURANCE
Load (% of 1RM)	80-100	60-80	<30%	60-80	30-60
Reps per set	1 - 4	2 - 5	3 - 7	8 - 12	13 - 20
Sets per exercise	3 - 5	3 - 6	4 - 8	2 - 4	2 - 4
Rest between sets	2 - 3min	3 - 5min	2 - 4min	1 - 3min	30 - 90 secs



اصول کلاسیک و ویژه در تمرین



No.	Exercise	T	Week 1	Week 2	Week 3	T	Week 4	Week 5	Week 6	T	Week 7	Week 8	Week 9
1	Half squats	✓	$\frac{70}{8}_1 \frac{80}{6}_2$	$\frac{80}{6}_2 \frac{85}{5}_3$ $\frac{90}{3}_1$	$\frac{85}{5}_2 \frac{90}{3}_3$ $\frac{95}{2}_1$	✓	$\frac{80}{6}_2 \frac{85}{4}_1$	$\frac{85}{5}_2 \frac{90}{3}_3$ $\frac{95}{2}_1$	$\frac{90}{3}_2 \frac{95}{2}_2$ $\frac{100}{1}_2$	✓	$\frac{80}{6}_3$	$\frac{85}{5}_1 \frac{90}{3}_3$ $\frac{95}{2}_2$	$\frac{90}{3}_2 \frac{95}{2}_3$ $\frac{100}{1}_2$
2	Arm pulls	✓	↓	↓	↓	✓	↓	↓	↓	✓	↓	↓	↓
3	Leg curls	✓	$\frac{60}{12}_1 \frac{70}{10}_2$	$\frac{60}{12}_1 \frac{70}{10}_2$ $\frac{80}{6}_2$	$\frac{70}{8}_2 \frac{80}{6}_2$ $\frac{85}{4}_2$	✓	$\frac{70}{8}_3$	$\frac{70}{8}_1 \frac{80}{6}_2$ $\frac{85}{5}_3$	$\frac{80}{6}_1 \frac{85}{5}_3$ $\frac{90}{3}_2$	✓	$\frac{80}{5}_3$	$\frac{80}{6}_1 \frac{85}{5}_3$ $\frac{90}{3}_2$	$\frac{85}{5}_2 \frac{90}{3}_2$ $\frac{95}{2}_2$
4	Reverse leg presses	✓	$\frac{70}{8}_2 \frac{80}{6}_2$	$\frac{80}{6}_2 \frac{85}{5}_3$ $\frac{90}{3}_1$	$\frac{85}{5}_2 \frac{90}{3}_3$ $\frac{95}{2}_1$	✓	$\frac{80}{6}_2 \frac{85}{4}_1$	$\frac{85}{5}_2 \frac{90}{3}_3$ $\frac{95}{2}_1$	$\frac{90}{3}_2 \frac{95}{2}_2$ $\frac{100}{1}_2$	✓	$\frac{80}{6}_3$	$\frac{85}{5}_1 \frac{90}{3}_3$ $\frac{95}{2}_2$	$\frac{90}{3}_2 \frac{95}{2}_3$ $\frac{100}{1}_2$
5	Bench presses	✓	↓	↓	↓	✓	↓	↓	↓	✓	↓	↓	↓
6	Power cleans	—	$\frac{60}{10}_1 \frac{70}{8}_2$	$\frac{60}{8}_1 \frac{70}{6}_2$ $\frac{80}{4}_1$	$\frac{70}{6}_1 \frac{80}{4}_3$	—	$\frac{70}{6}_3$	$\frac{70}{6}_1 \frac{80}{4}_3$	$\frac{80}{4}_4$	—	$\frac{70}{6}_3$	$\frac{70}{6}_1 \frac{80}{4}_3$	$\frac{80}{4}_4$

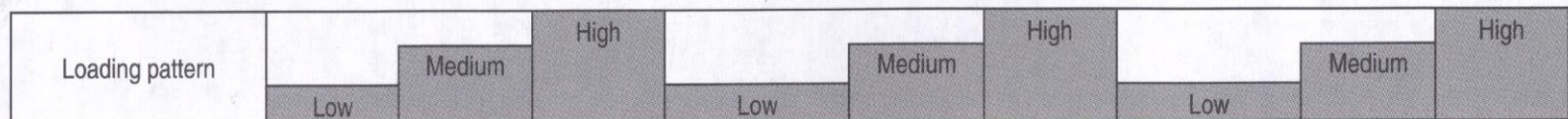


Figure 9.1 Example MLM program for an Olympic-class sprinter.

wrestler. The program suggested in each box was repeated four times a week.

No.	Exercise	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
1	Half squats	$\frac{60}{12}_3$	$\frac{60}{12}_4$	$\frac{70}{10}_4$	$\frac{60}{12}_3$	$\frac{75}{10}_4$	$\frac{80}{8}_4$
2	Seated rows	$\frac{60}{12}_3$	$\frac{60}{12}_4$	$\frac{70}{10}_4$	$\frac{60}{12}_3$	$\frac{75}{10}_4$	$\frac{80}{8}_4$
3	Twisted abdominals	3×15	3×18	4×12	4×12	4×15	4×18
4	Leg curls	$\frac{60}{10}_3$	$\frac{60}{8}_4$	$\frac{70}{8}_3$	$\frac{60}{8}_3$	$\frac{60}{8}_4$	$\frac{70}{8}_4$
5	Dead lifts	$\frac{60}{10}_3$	$\frac{60}{8}_4$	$\frac{70}{8}_3$	$\frac{60}{8}_3$	$\frac{60}{8}_4$	$\frac{70}{8}_4$
6	Bench presses	$\frac{60}{12}_3$	$\frac{60}{12}_4$	$\frac{70}{10}_4$	$\frac{60}{10}_3$	$\frac{75}{10}_4$	$\frac{80}{8}_4$
7	Lateral deltoid raises	$\frac{60}{10}_3$	$\frac{60}{8}_4$	$\frac{70}{8}_3$	$\frac{60}{8}_3$	$\frac{60}{8}_4$	$\frac{70}{8}_4$
8	Shoulder shrugs	$\frac{60}{12}_3$	$\frac{60}{12}_4$	$\frac{70}{10}_4$	$\frac{60}{12}_3$	$\frac{75}{10}_4$	$\frac{80}{10}_4$
9	Toe raises	$\frac{60}{15}_3$	$\frac{60}{15}_4$	$\frac{70}{12}_4$	$\frac{70}{10}_3$	$\frac{75}{12}_4$	$\frac{80}{10}_4$
10	Lat pull-downs	$\frac{60}{12}_3$	$\frac{60}{12}_4$	$\frac{70}{10}_4$	$\frac{60}{12}_3$	$\frac{75}{10}_4$	$\frac{80}{10}_4$
11	Cleans	$\frac{60}{12}_3$	$\frac{60}{12}_4$	$\frac{70}{12}_4$	$\frac{60}{12}_3$	$\frac{75}{12}_4$	$\frac{80}{10}_4$

Loading pattern			High			High
	Low	Medium		Low	Medium	

Figure 8.1 Example loading pattern for a 6-week training program for the hypertrophy phase for a wrestler (heavyweight category).



<i>Monday- Upper Body A</i>		<i>Thursday- Upper Body B</i>	
Bench Press	3 X 6-8	Dips	3 X 6-8
Bent Over Row	3 X 6-8	Pull-Ups	3 X 6-8
DB Shoulder Press	3 X 6-8	DB Side Lateral	3 X 6-8
Lying Tricep Extension	3 X 6-8	Tricep Cable Pressdown	3 X 6-8
Barbell or DB Curl	3 X 6-8	Cable Curl	3 X 6-8
<i>Tuesday- Lower Body A</i>		<i>Friday- Lower Body B</i>	
Squat	3 X 6-8	Deadlift	3 X 6-8
Stiff Leg Deadlift	3 X 6-8	Leg Press	3 X 6-8
Leg Extension	3 X 6-8	Lunges	3 X 6-8
Leg Curl	3 X 6-8	Seated Calf Raise	3 X 6-8
Standing Calf Raise	3 X 6-8	DB Shrugs (Optional)	3 X 6-8
Abs		Abs	
Lying Leg Raise	3 X 10-15	Incline Crunch	3 X 10-15
Swiss Ball Crunch	3 X 10-15	Back Extension	3 X 10-15

Note: Rest Periods = 90 Seconds

نمونه ای از تمرین هیپرتروفی سیستم جداسازی

TABLE 6.37 Bookend Workouts

WORKOUT 1: CHEST, BICEPS, ABS

Muscle group	Exercise	Sets/ reps	Rest
Chest	Bench press	3/6-8	2-3 min
	Incline dumbbell bench press	3/8-10	2 min
	Incline dumbbell fly	3/10-12	1-2 min
	Cable crossover	2/12-15	1-2 min
	Bench press	1/to failure ¹ 2/12-15	1 min 1 min
Biceps	Barbell curl	3/6-8	2-3 min
	Incline dumbbell curl	3/8-10	2 min
	Cable concentration curl	3/10-12	1 min
	Barbell curl	1/to failure ¹ 2/12-15	1 min 1 min
Abs	Hanging leg raise ²	2/6-8	1-2 min
	Crunch	3/to failure	1 min
	Hanging leg raise	1/to failure 2/to failure ^{1,3}	1 min 1 min



PUSH HYPERTROPHY

Incline DB Bench 4 x 8-10
Flat DB Bench 3 x 10-12
Arnold Press 3 x 8-10
Skull Crushers 3 x 10-12
Tricep Pushdowns 3 x 12-15
Lateral Raises 3 x 8-10



Follow @apfau

PULL HYPERTROPHY

Lat Pulldowns 4 x 8-10
Dumbbell Rows 4 x 10-12
Cable Rows 3 x 8-10
Dumbbell Shrugs 3 x 10-12
Cable Curls 3 x 10-12
Facepulls 3 x 10-12



rob_its_gymtime
Niedersachsen, Germany

BUILD MUSCLE

@apfau

PUSH



Bench Press
Incline Bench
Overhead Press
Dips
Skull Crushers

PULL



Deadlifts
Barbell Rows
Pullups
Barbell Curls
Facepulls

LEGS



Squats
Leg Press
Lunges
RDLs
Calf Raises



2,639 likes

rob_its_gymtime Push pull legs split ! You should do this workout when you're going 5+ times per week to the gym ! 😊 @rob_its_gymtime pic by @apfau

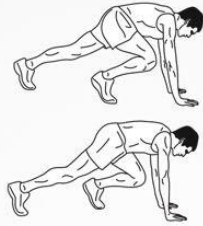
Cardio & Core

DAREBEE WORKOUT @ darebee.com

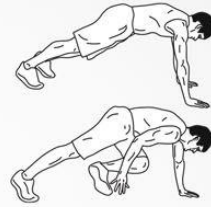
LEVEL I 3 sets LEVEL II 5 sets LEVEL III 7 sets REST up to 2 minutes



60 high knees



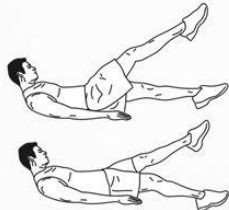
10 climbers



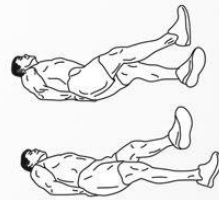
10 climber taps



60 high knees



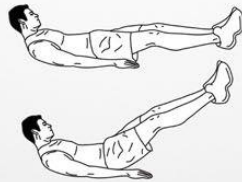
10 flutter kicks



10 scissors



60 high knees



10 leg raises



10 raised leg circles





Boot camp

45 Minute Bootcamp

Tabata Circuit (20 seconds work, 10 seconds rest) 2 times through
Bootcamp Circuit (45 seconds work, 15 seconds rest)
Tabata Circuit (20 seconds work, 10 seconds rest) 2 times through
Bootcamp Circuit (30 seconds work, 10 seconds rest)

Pushups
One Arm Row (R)
Squat Press with Leg Lift
One Arm Row (L)
Bulgarian Split Squat (R)
Deadlift with Front Raise
Plank Lat Raises (R)
Plie Squat Pulses
Bent Fly
Bulgarian Split Squat (L)

Touchdown Press
Plank Lat Raises (L)
Kettlebell Catch & Switches
One Leg Squat into Lunge (R)
Tricep Kickbacks
One Leg Squat into Lunge (L)
Double Arm Kettlebell Swings
Lateral Lunge (R)
Tricep Pushups
Lateral Lunge (L)

Tabata

Burpees
Skaters
High Knees
Jumping Jacks

Tabata Workout

four different tabata that will leave you dripping in sweat

pbefingers.com

ONE

20 sec. burpees

10 sec. rest

20 sec. jumping jacks

10 sec. rest

4x

THREE

20 sec. mountain climbers

10 sec. rest

20 sec. high knees

10 sec. rest

4x

TWO

20 sec. squat jumps

10 sec. rest

20 sec. skaters

10 sec. rest

4x

FOUR

20 sec. kettlebell swings

10 sec. rest

20 sec. jump rope

10 sec. rest

4x

10 minute fat burning

TABATA WORKOUT

TABATA 1 2 rounds

jumping jacks - 20 secs

rest 10 secs

butt kicks - 20 secs

rest 10 secs

squats - 20 secs

rest 10 secs

mountain climbers - 20 secs

rest 10 secs

rest 1 minute

TABATA 2 4 rounds

burpees

rest 10 secs

squat jumps

rest 10 secs

HITWEEKLY

Total Body TABATA WORKOUT

Complete each exercise for 20 secs, rest 10 secs

Perform each tabata set 4 times

Rest 1 minute between sets

SET 1

**Dumbbell Push Press
Mountain Climbers**

SET 2

**Dumbbell Cleans
Squats**

SET 3

**Dumbbell Reverse Lunges
Standing Overhead Tricep Extension**

SET 4

**Kettlebell Swings
Dumbbell Curl to Arnold Press**

SET 5

**Goblet Squats
Stability Ball Leg Curls**

*Workout time estimated 25 minutes

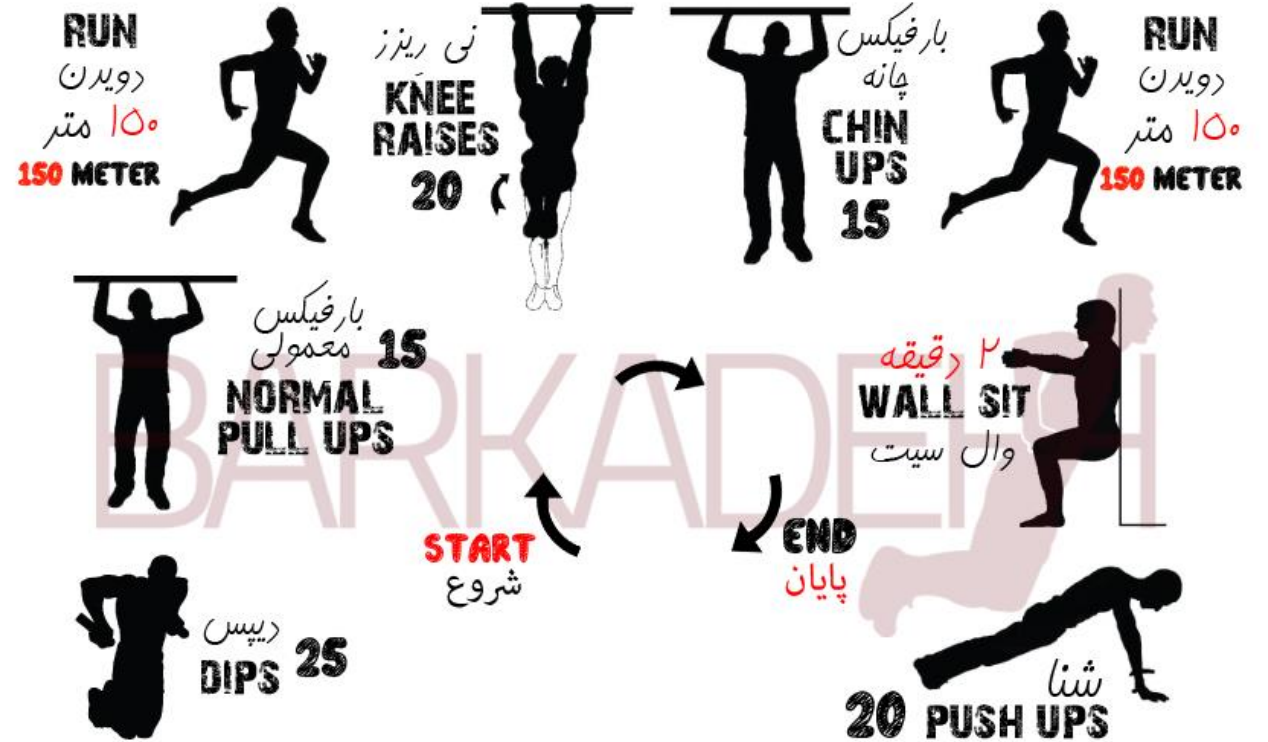
*Select a weight that is challenging, but not too heavy
You should be able to complete the movements quickly, but safely

FiT mitten 
KITCHEN

Crossfit at Home

ChallengeDetails.com

25 squats
5 push ups
20 squats
10 push ups
15 squats
15 push ups
10 squats
20 push ups
5 squats
25 push ups



تمرین کل بدن Full Body Workout | ۱ دقیقه استراحت بین هر دور تمرین 1 Min Rest Between Each Set | ۳ تا ۵ مرتبه 3 to 5 rounds | متوسط Normal | BARKADEH



HIIT Workout Examples

HIIT Workout	Work / Rest Intervals	Sets	Total Duration	Benefits
Tabata	20 sec. / 10 sec.	8	4 min.	One of the most popular styles of HIIT that improves conditioning and burns an elevated amount of Calories in only 4 minutes of work.
Sprint	30 sec. / 4 min.	4-6	18-27 min.	Although the rest interval is eight times as long as the work interval, it is one of the most challenges HIIT workouts, as it calls for a max-effort Sprint.
Short Sprint	8 sec. / 12 sec.	60	20 min.	A less demanding HIIT workout that's been proven effective for conditioning and fat loss.
One-to-One	30 sec. / 30 sec.	10	10 min.	The One-to-One HIIT workout is easy to perform and can be quickly adapted to your fitness by either increasing the work or decreasing the rest.
Tempo Runs	40-Yard Sprint/ Walk back to start	MAX	10 min.	Tempo Runs involve an 80-percent run and is one of the most effective ways to improve your conditioning.
Sport-Specific	15 sec. / 35 sec.	7-10	6-8 min.	This is an example of how intervals can be adapted for your sport (in this case football) by changing the work and rest intervals to simulate the workload of that sport.

CARDIO + UPPER BODY STRENGTH + CORE

20 MINUTE UPPER BODY HIIT WORKOUT

This upper body and cardio HIIT workout will build strength and improve overall conditioning. Bonus - it also works the core and legs! Work your entire body and blast a ton of calories in just 20 minutes. Get everything ready in advance, set an interval timer or use a stopwatch and get to work.

WORKOUT DETAILS

30 seconds push up to side plank
15 seconds rest
30 seconds standing arnold press
15 seconds rest
30 seconds kettlebell high pull
15 seconds rest
30 seconds alternating dumbbell row
15 seconds rest
45 seconds step mill, row or run
30 seconds rest
repeat for 5 rounds

RUNNINGONREALFOOD.COM

20 Minute HIIT Workout

45 sec Mt. Climbers, 10 sec rest
45 sec jump lunges, 10 sec rest
45 sec push ups, 10 sec rest
45 sec high knees, 10 sec rest
45 sec jump squats, 10 sec rest
45 sec plank jacks, 10 sec rest
45 sec butt kickers, 10 sec rest
45 sec burpees, 10 sec rest
45 sec jumping jacks, 10 sec rest
45 sec plank walk, 10 sec rest

10 moves
45 seconds
2x through

DANETTE MAY.COM

Lactate Tolerance

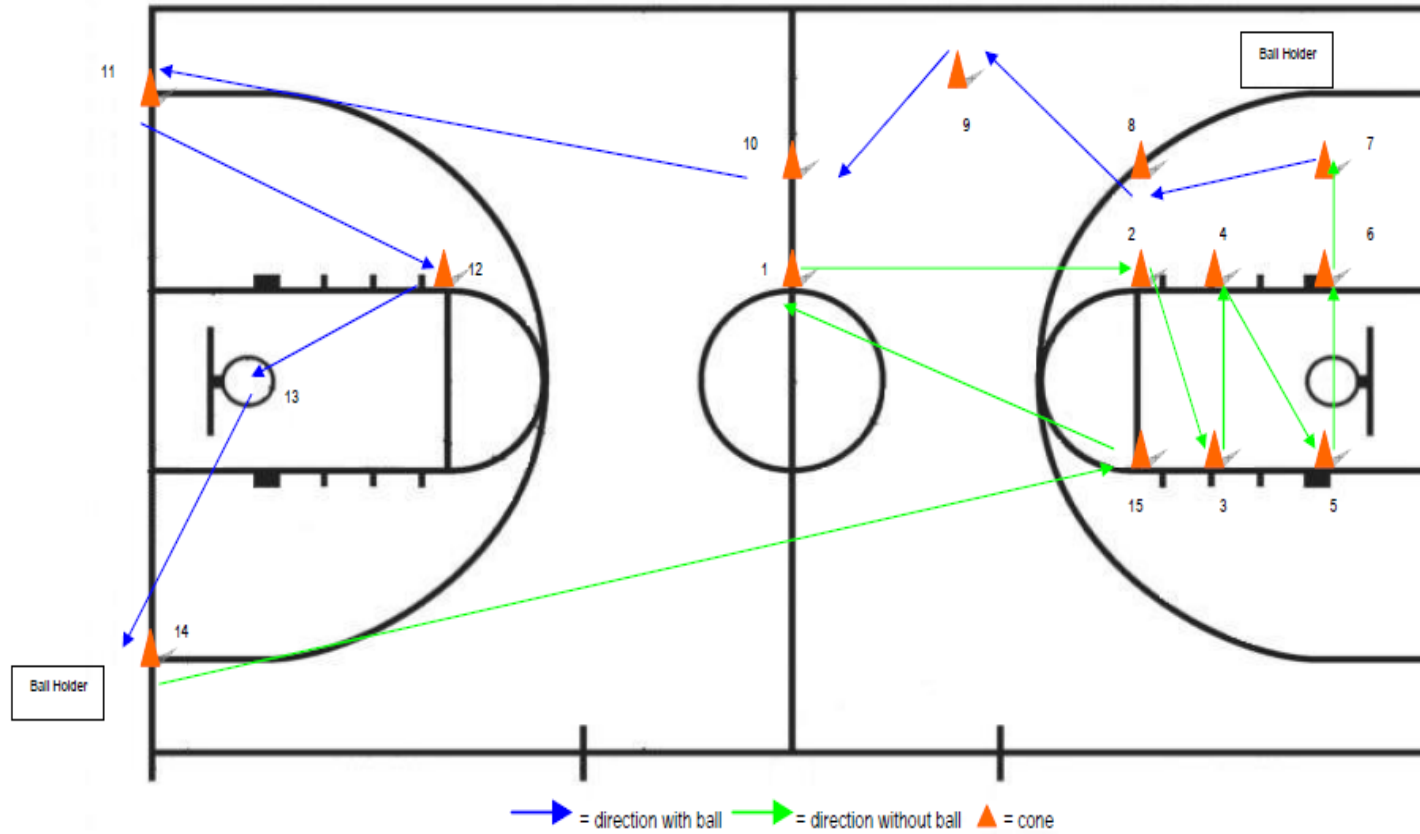
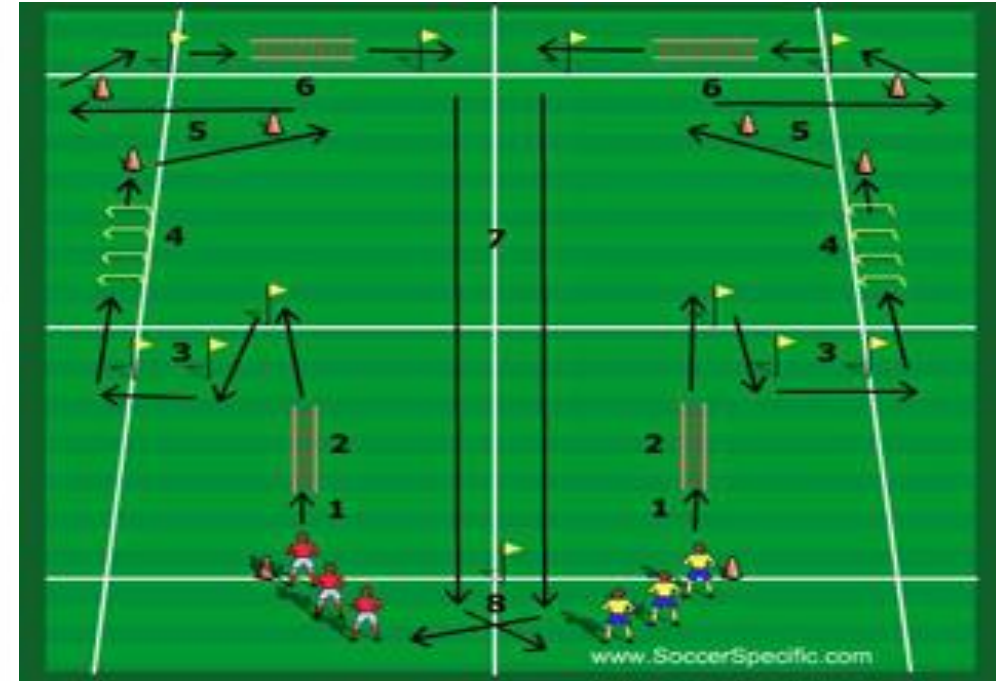
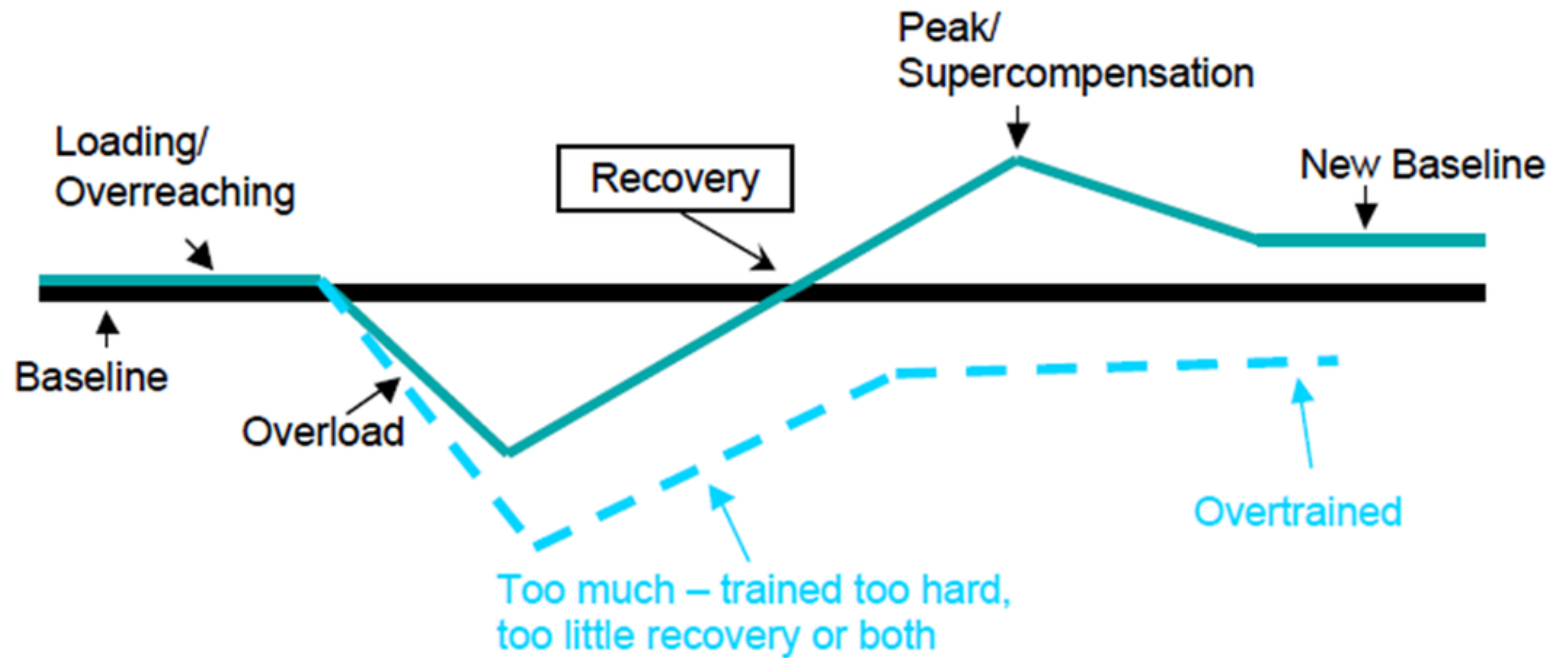


Figure 14. Basketball movement specific training circuit. 1-2 forward sprint; 2 pivot left; 2-3 shuffle left; 3-4 shuffle right; 4-5 shuffle left; 5-6 shuffle right; 6-7 run into vertical jump (collect ball upon landing); 7-10 speed dribble ball around cones; 10-11 speed dribble; 11-12 speed dribble; 12-13 lay-up attempt; 13 lay-up rebound; 13-14 speed dribble (drop ball at 14); 14-15 forward sprint; 15-1 back pedal.



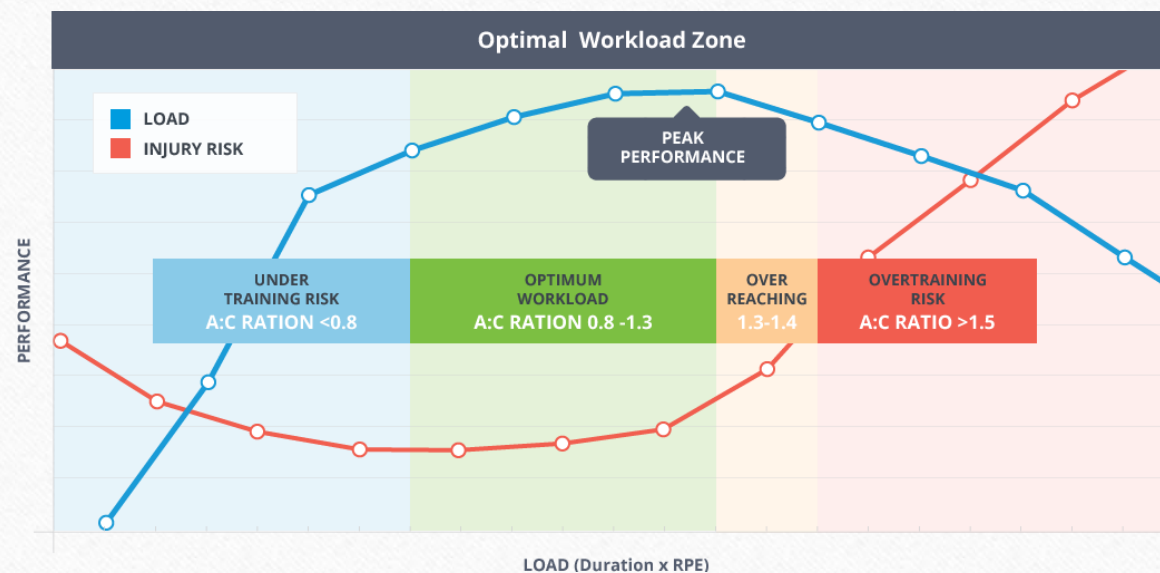
INTRODUCTION



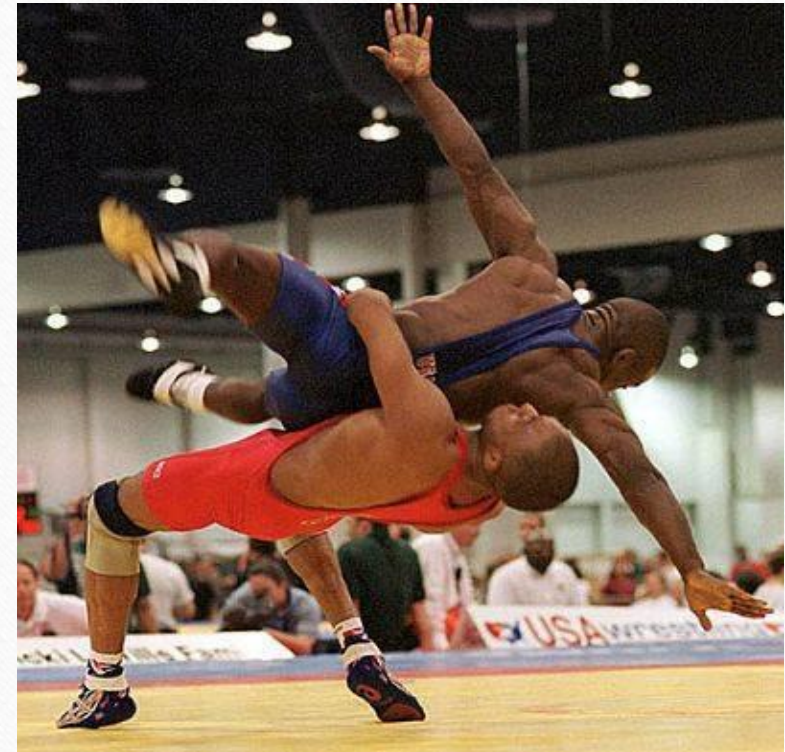
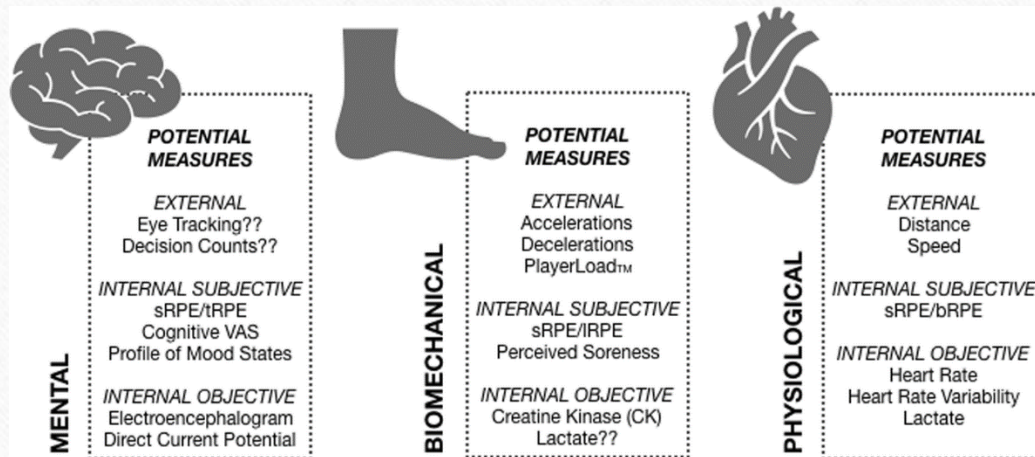
Training Load

Recovery

بار تمرین و خستگی



بار تمرین حاصل فشار متابولیکی، فشار مکانیکی و فشار ذهنی



Fatigue is multifactorial (caused by a combination of many factors)

Fuel Depletion	Neuromuscular Event
Intramuscular ATP	Decrease in CNS firing (rate and intensity)
Phosphocreatine	Impaired sodium (Na ⁺) and potassium (K ⁺) gradients
Muscle Glycogen	
Blood Glucose	
Metabolic By-Products	Elevated Body Temperature
H ⁺ ions in plasma and muscles	Very high core temperature
Inorganic phosphate	Increased rates of dehydration
Adenosine diphosphate (ADP)	Redistribution of blood away from muscles to assist cooling=less blood/ O
Ca ⁺	

INTRODUCTION

How to do monitoring? (self-reported subjective measures)
(RPE)

“How was your workout?”



میزان درک فشار = شاخص کاربردی برای بار تمرین

RATING OF PERCEIVED EXERTION (RPE)

Borg's Scale	(Gunner borg 1982):	Modified Borg Scale:
6-		0- at rest
7- very, very light		1- very easy
8-		2- somewhat easy
9- very light		3- moderate
10-		
11- fairly light		4- somewhat hard
12-		5- hard
13- somewhat hard		
14-		6-
15- hard		
16-		7- very hard
17- very hard		8-
18-		9-
19- very, very hard		
20-		10- very, very hard



توزیع موجی بار تمرین

Daily training workloads

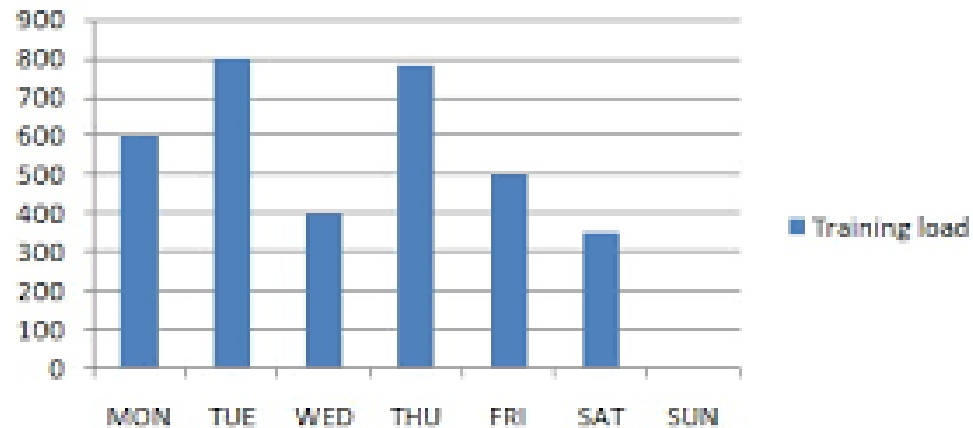


Table 2

Example of calculating internal training load with session-RPE

Internal TL = session-RPE $\times$ duration (minutes)

If an athlete indicated that an exercise bout lasting 60 minutes was hard (RPE = 5) the internal TL for that session could be determined using the following calculation

Internal TL = 5 $\times$ 60 = 300 AU

AU = arbitrary units; RPE = rate of perceived exertion; TL = training loads.

INTRODUCTION

Why Monitor Athletes?

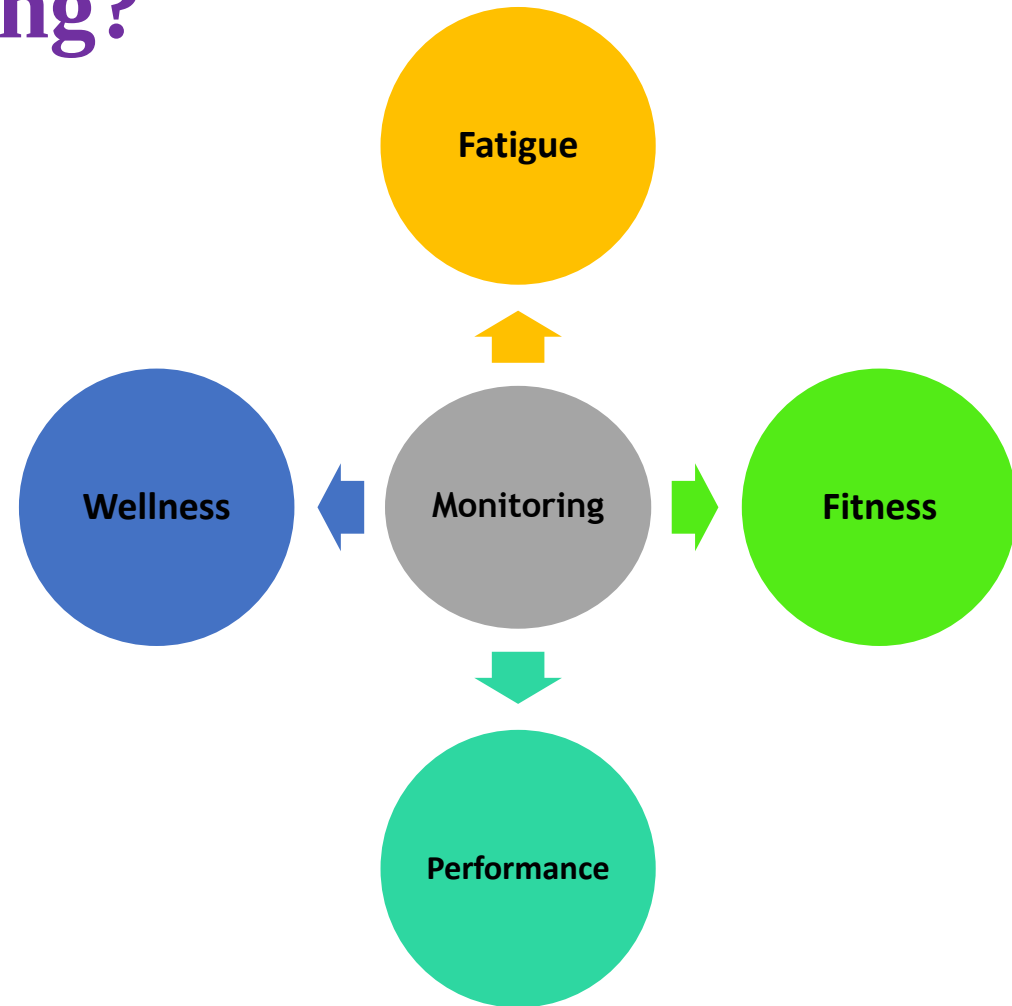
- To measure **the effectiveness** of training programs.
- To decide **how to revise or update training** programs.
- To use the information **to improve athletic performances**.



INTRODUCTION

What is Monitoring?

- **Athlete monitoring** has become an integral component of total athlete preparation.
- The monitoring program attempts to quantify factors such as **training dosage** (also known as **load**), **variables of training**, and **lifestyle factors** (e.g., sleep, nutrition, life stress).



Hooper's Index

Self-reported subjective measures of wellbeing will acquire from players every morning after waking up throughout each camp. Hooper's questionnaire includes four questions pertaining to **sleep quality**, **stress**, **muscle fatigue** and **soreness**. Players rate their response to each question on a 7-point scale with **1 and 7** representing very good and poor wellness ratings, respectively. Ratings from each questionnaire will summe to determine their Hooper's Index .

Sleep	Stress
1 – Very, very good	1 – Very, very low
2 – Very good	2 – Very low
3 – Good	3 – Low
4 – Average	4 – Average
5 – Bad	5 – High
6 – Very bad	6 – Very high
7 – Very, very bad	7 – Very, very high
Fatigue	Muscle soreness
1 – Very, very low	1 – Very, very low
2 – Very low	2 – Very low
3 – Low	3 – Low
4 – Average	4 – Average
5 – High	5 – High
6 – Very high	6 – Very high
7 – Very, very high	7 – Very, very high

INTRODUCTION

How to do monitoring?

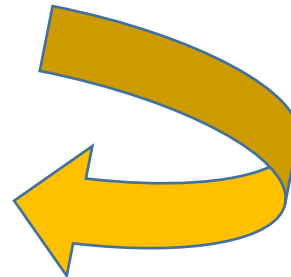


Subjective Indices
(self reported)



Objective Indices
(usually invasive)

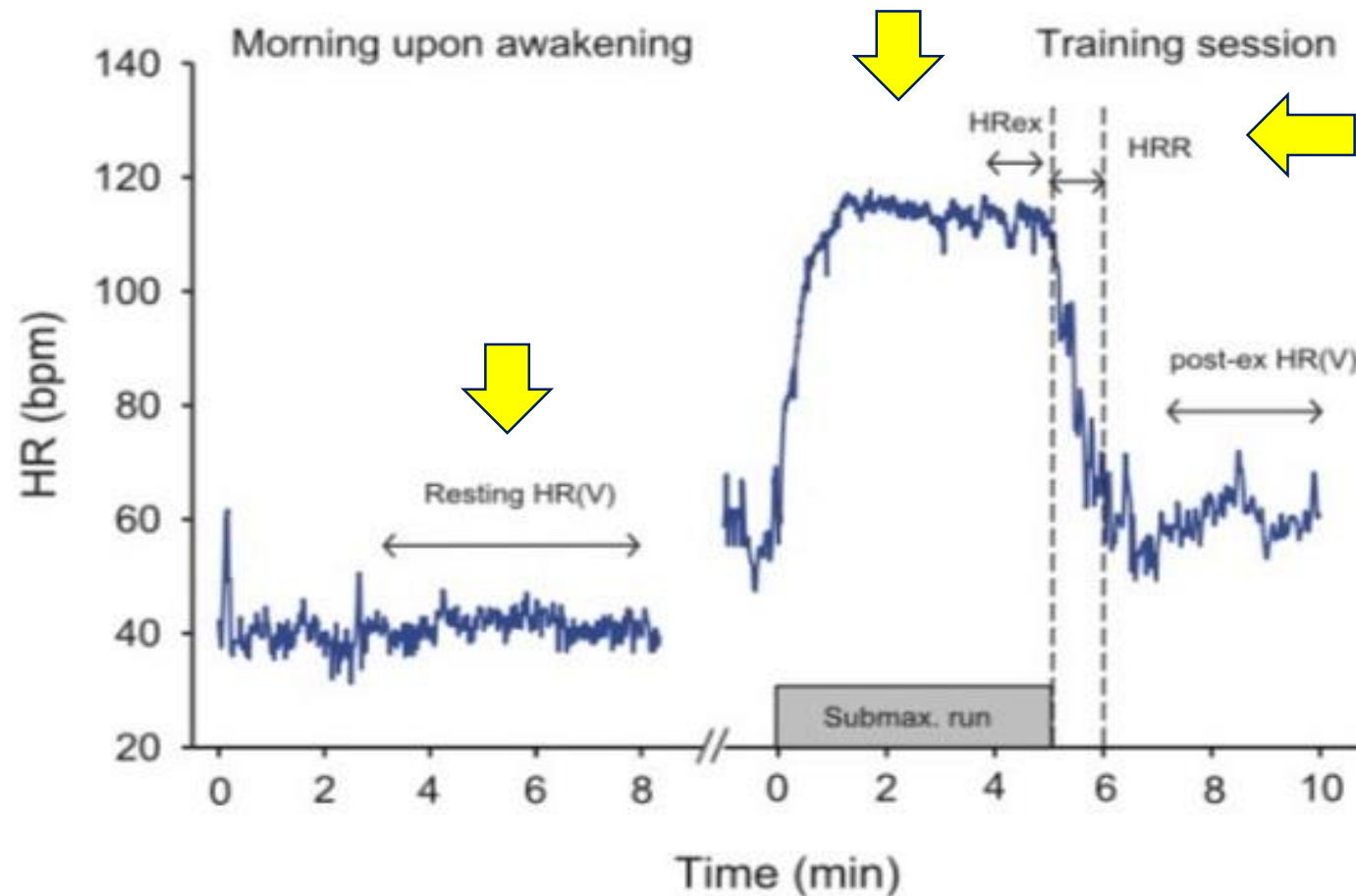
HRV



- **Jump Testing**
- Muscle Stiffness
- Force Production
- Performance Tests
 - **Submaximal Testing**
 - Sprint Testing
 - Velocity Testing
- Movement Screening and Flexibility Testing
- Speed test
- **HR indexes** (HRV, Onset HR, Recovery HR, HRex)
- Questionnaires
 - **Wellness**
- **RPE**
- Hormonal & Biochemical markers
- Immunological Markers
- Menstrual cycle Monitoring

INTRODUCTION

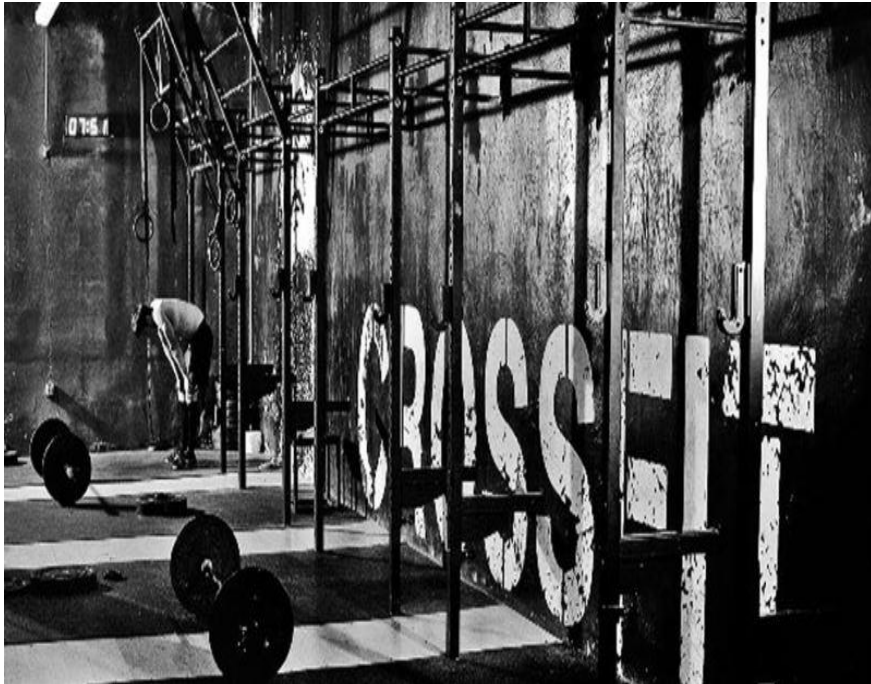
How to do monitoring? (HR responses)



INTRODUCTION

How to do monitoring? (self-reported subjective measures)

Wellness (Hooper Index)



اندازه خستگی



FATIGUE SCALE

Select the number that best describes how you feel today.



NO
FATIGUE

0



MILD
FATIGUE

1

2

3



MODERATE
FATIGUE

4

5

6



EXTREME
FATIGUE

7

8

9



THE WORST
FATIGUE

10

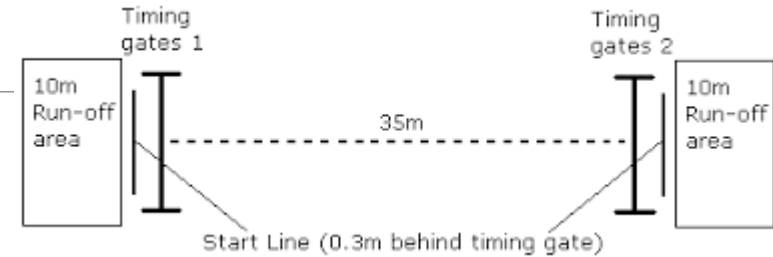
شاخص خستگی نشاندهنده اندازه خستگی

RAST



Running-Based Anaerobic Sprint Test

- 400 meter track with straight, 35 m marked section
- Complete six 35 m sprints at max pace (10 sec between sprints for turnaround)
- Record time for each sprint to 0.01 sec
- Calculate Power = $(\text{Weight} \times \text{Distance}^2) / \text{Time}^3$
 - Maximum power: highest value
 - Minimum power: lowest value
 - Average power: sum of all six values $\div 6$
 - Fatigue Index: $(\text{Maximum} - \text{Minimum power}) \div \text{Total time for 6 sprints}$



Sprint	Time (s)	Power(W)	Velocity (m·s ⁻¹)
1	4,49	1123,25	7,80
2	4,72	966,91	7,42
3	4,90	864,22	7,14
4	5,19	727,30	6,74
5	5,44	631,56	6,43
6	5,60	578,96	6,25

Athlete's bodymass 83 kg

Peak Power (W)	1123,25
Minimum Power (W)	578,96
Average Power (W)	815,37
Fatigue index (W·s ⁻¹)	17,94

خواب کافی و کیفی یکی از عوامل اصلی ریکاوری ورزشی



EP. 150 James Hoffmann

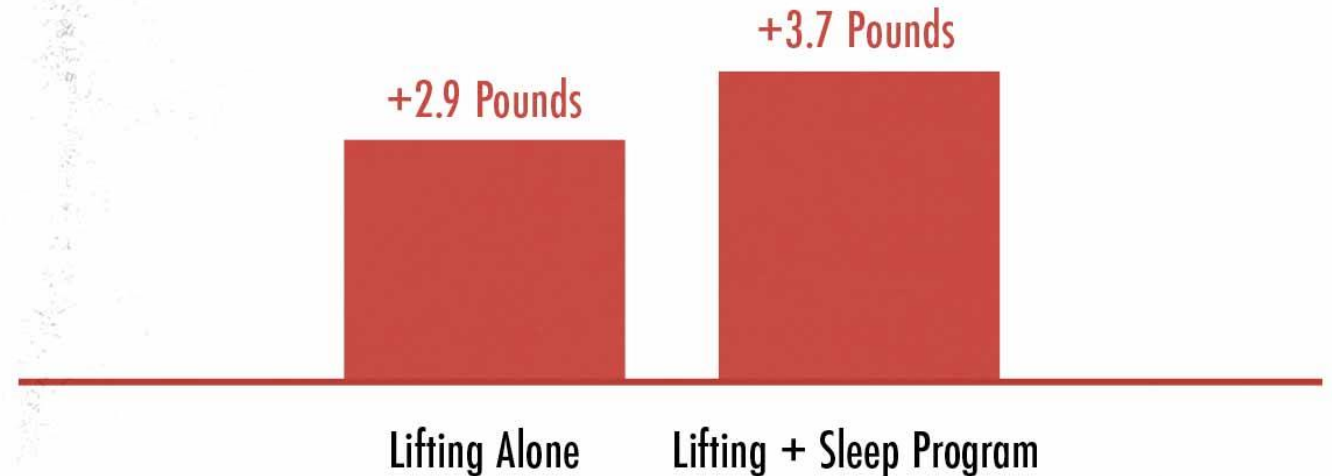
**SLEEP &
RECOVERY FOR
HYPERTROPHY**



Because the following occur during sleep:

- Secretion of hormones, including growth hormone
- Blood supply to muscles increases, leading to tissue growth and repair
- Immune system support
- Regulation of hunger hormones

Muscle Growth After 10 Weeks



شاخص خستگی یا اندازه کاهش عملکرد یا درصد کاهش سرعت نشاندهنده اندازه خستگی

RAST

TABLE 1. Physiological responses, RPE, RST performance indices, and swimming times of the study participants (mean $\pm$ SD).*

Post-RST heart rate ($\text{b} \cdot \text{min}^{-1}$)	168 ± 7
Post-RST blood lactate ($\text{mmol} \cdot \text{L}^{-1}$)	5.5 ± 2.0
RPE (1–10)	6.8 ± 1.7
Ideal sprint time (s)	53.4 ± 1.6
Total sprint time (s)	56.0 ± 2.2
Performance decrement (%)	4.7 ± 2.3
100-m Swim time (s)	55.63 ± 2.34
2,000-m Swim time (min)	24.74 ± 1.27

*RST = repeated sprint test; RPE = rating of perceived exertion.

Repeated sprint swimming test(RST)

- 8x15m,30 second rest
- $\{\text{TS}/\text{IS} \times 100\} - 100 = \text{PD}$
- TS=total swim time
- IS=ideal 15m swim time(the best time x 8)

