



ZONAL DEVELOPMENT PROGRAM







Strength and Power training for boxers







Free weights or Fixed machines?









What kind of exercises are we looking for?

- Level 1: Isolated exercises on machine with varied resistance
- Level 2: Complex exercises on machine with varied resistance
- Level 3: Isolated exercises on machine
- Level 4: Complex exercises on machine
- Level 5: Isolated exercises with free weights
- Level 6: Complex exercises with free weights





When to start with Strength training?







- Strength training can have injury-prevention effects and stimulate bone structure.

 Increased strength also facilitates motor learning.
- Exercise load should be **adapted to the child's conditions** and degree of maturity.

 Strength training for children should not be limited to weight training at a gym, but that type of weight training should also not be excluded.
- Strength training 2-3 times a week for children and adolescents leads to significant increases in strength.
- It is not primarily the increase in muscle mass in children that is behind the increases in strength but a neuromuscular adaptation to the strength training





When and how to start?

- Depending on individual development level but **around 7-8 years** old can be seen as a benchmark if they have good control of their body and can follow instructions.
- Initially 1-2 strength training sessions / week should be applied. The strength portion of the session should preferably be 20-40 minutes long.
- **Keep it light.** Kids can lift light weights with a high number of repetitions. In most cases, one or two sets of 10 to 15 repetitions are enough. 8-12 exercises with focus on the major muscle groups. Resistance doesn't have to come from weights, mix with body-weight and other exercises. From 12 years it is advantageous to include a greater proportion of plyometric strength exercises.





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- Proper warm up and cool down.
- **Emphasize proper technique.** It's better to do the exercise correctly than to do more repetitions or to take on more resistance.
- **Focus on Large muscle groups.** The content should be varied and combined with exercises for the development of coordination, balance and fitness.
- Supervise.
- **Rest between workouts.** At least one day off between two strength sessions.
 - Keep it fun.



Strength Training for High Performance

Neuromuscular capacity to overcome an external resistance.

- Types of strength in sports:
- Maximum strength: The greatest force that a contracting muscle can produce (1 max. repetition)
- **Explosive strength:** Power Maximum force in shortest period of time. Combination of speed of contraction and speed of movement.
- Strength Endurance: Capacity to continue to exert force while increasing fatigue.



Training strength in movements rather than specific muscles.

- Strength is trained between 70-100% in correct choice of exercise
- Power is trained between 70-90% in correct choice of exercise like
- "hand-foot coordination"



What physical qualities are you looking for?

- Maximum strength
- Power strength
- Speed strength

- > -strength exercise should not exceed 35 reps in one session (+-3)
- > -power exercise should not exceed 25 reps in one session (+-3)
- > -minimum 12 reps per exercise in one session to get a trainingeffect



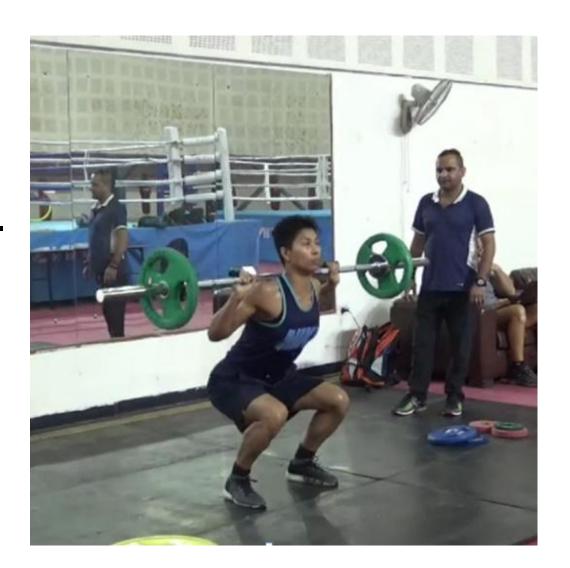


Strength exercises

-between 10-12 reps per set hypertrophy training

 -between 6-8 reps per set- strengthand hypertrophy training

-between 1-3 reps per set- strength training



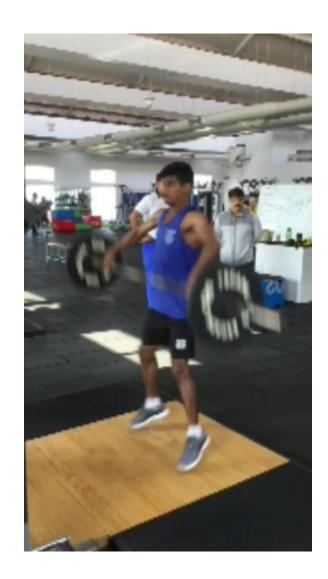




Power exercises

-between 4-5 reps per set explosive-technical training

-between 1-3 reps per set explosive strength/ maximum
 load







Speed strength

 No more reps than you can keep the speed and technique

(most common between 4-10 reps, 10-40 % 1RPM)





Intensity

- up to 65 % warm-up
- 65-70% preparing the nervous and musculoskeletal system
- 70-80% develop strength and speed strength qualities
- 80-90% further develop the strength qualities and explosives abilities
- 90-100 (+100)% develop both psychological and strength qualities, recruits all muscle fibers



Complete daily program should include following:

- lower extremity strength including core, i.e. squats
- lower extremity power including core, i.e. power cleans, power snatch, snatch, cleans
- upper body strength and power including core, i.e. push-press, bench-press, jerk, split jerk
- lower back, i.e. good morning, deadlift or variations





Periodization system

Function/ Technique	Basic Strength	Max. Strength	Explosive Strength	Speed Strength	





Example Training Session

1.	Warm up
2.	Technical drill
3.	Strength/Power
4.	Strength/Power
5.	Complementary Exercises/Sport Specific-Power-Speed
6.	Complementary Exercises/Sport Specific-Gymnastic
7.	Complementary Exercises/Sport Specific-Upper Body





Example Training Session

Sess	sion 2	Mixed	Zone 0		Zone 1	Zone 2	Zone 3	Set
			< 70%		70-79%	80-89%	90-97%	
1.	Comple	x Exercise						2
			6+6+6+6+6					
2.	Snatch	drill		3				4
	From hip	+from knee	2+2		2+2			
3.	Clean &	Jerk No stop		2				4
			3		2			
4.	Squat+F	Pushpress		2				3
			4+4		4+0	3+0		
5.	1 Upper	r body						4
		Shoulders, Il Floor Press, etc)	6-8					
6.	1 Jump	Exercise						
		art-High land, Box irdles, etc)	4-6					4