

Additional file 2. Table that illustrates the periodization of the training program.

Exercise	Sets x Repetitions				Exercise	Sets x Repetitions			
	Week 1-3		Week 4-6			Week 7		Week 8-12	
	MON (LB)	THU (LB)	MON (LB)	THU (LB)		MON (LB)	THU (LB)	MON (LB)	THU (LB)
	TUE (UB)	FRI (UB)	TUE (UB)	FRI (UB)		TUE (UB)	FRI (UB)	TUE (UB)	FRI (UB)
<i>Lower Body</i>					<i>Lower Body</i>				
Back squat	3 x 12-RM	3 x 12-RM	3 x 10-RM	3 x 10-RM	Back squat	4 x 5*	4 x 5*		
Leg press	3 x 12-RM	3 x 12-RM	3 x 10-RM	3 x 10-RM	Leg press	3 x 6*	3 x 6*		
Leg curl	3 x 12-RM	3 x 12-RM	3 x 10-RM	3 x 10-RM	Hack squat			3 x 8-RM	
Leg extension	3 x 12-RM	3 x 12-RM	3 x 10-RM	3 x 10-RM	Lunges			3 x 8-RM	3 x 12-RM
Calf raises seated	3 x 12-RM		3 x 10-RM		Deadlift			3 x 8-RM	3 x 12-RM
Calf raises standing		3 x 12-RM		3 x 10-RM	Leg extension†			2 x 15-RM	3 x 12-RM
Crunch	3 x 25-RM	3 x 25-RM	3 x 25-RM	3 x 25-RM	Leg curl†			2 x 15-RM	3 x 12-RM
<i>Upper Body</i>					<i>Upper Body</i>				
Barbell bench press	3 x 12-RM		3 x 10-RM		Donkey calf raises			3 x 8-RM	3 x 12-RM
Dumbbell bench press		3 x 12-RM		3 x 10-RM	Crunch	3 x 25-RM	3 x 25-RM	3 x 25-RM	3 x 25-RM
Back lat pull-down	3 x 12-RM	3 x 12-RM	3 x 10-RM	3 x 10-RM	Barbell bench press	4 x 5*		3 x 8-RM	
Shoulder press	3 x 12-RM		3 x 10-RM		Dumbbell bench press				3 x 12-RM
Inclined bench press		3 x 12-RM		3 x 10-RM	Back lat pulldown	3 x 6*			
Seated row	3 x 12-RM	3 x 12-RM	3 x 10-RM	3 x 10-RM	Standing row		3 x 6*	3 x 8-RM	3 x 12-RM
Dips	3 x 12-RM	3 x 12-RM	3 x 10-RM	3 x 10-RM	Barbell shoulder press	3 x 6*		3 x 8-RM	
Triceps pushdown	3 x 12-RM		3 x 10-RM		Inclined barbell bench press		4 x 5*		3 x 12-RM
Lying triceps extension		3 x 12-RM		3 x 10-RM	Close grip front lat pull-down			3 x 8-RM	3 x 12-RM
Biceps barbell curl	3 x 12-RM	3 x 12-RM	3 x 10-RM	3 x 10-RM	Biceps barbell curl	2 x 6*	2 x 6*	4 x 8-RM	
Biceps dumbbell curl seated	3 x 12-RM		3 x 10-RM		Biceps Scott curl				3 x 12-RM
Scott curl		3 x 12-RM		3 x 10-RM	Barbell bench press narrow grip			3 x 8-RM	
					Triceps extension lying				3 x 12-RM

Training days were split into an upper/lower body split routine. Each body part was exercised twice a week for 12 weeks. Weeks 1 to 6 comprised the first mesocycle of the training program, where training was periodized in linear fashion by gradually increasing intensity and decreasing volume. Following a 1-week taper to avoid overtraining and ensure optimal recovery, a second mesocycle was performed during weeks 8 to 12. During this cycle a nonlinear periodization protocol was employed by varying volume and intensity within each week. Additionally, type and number of exercises varied slightly within each mesocycle to optimize the training stimulus. MON, Mondays; TUE, Tuesdays; THU, Thursdays; FRI, Fridays; LB, lower body; UB, upper body.

* at 70% 5-RM.

† performed as supersets on session 1 (Mondays) of each week. Rest periods were extended from between 1 min and 1.5 min for 12-RM to between 2 min and 3 min for 10-RM and 8-RM, respectively. For crunches rest periods were kept constant at 1 min throughout the study. Repetition velocity was moderate, ranging between 1-2 s for concentric and eccentric muscle actions, respectively.