THE
NAVAL SPECIAL WARFARE PHYSICAL TRAINING GUIDE

Produced by: The Naval Special Warfare Center

The Naval Special Warfare Physical Training Guide (PTG) is a tailored 26 week training program designed specifically to help you develop the strength and endurance to withstand the rigors of SEAL Basic Underwater Demolition/SEAL (BUD/S) or SWCC Basic Crewman Training (BCT), and the Navy SEAL or SWCC Physical Screening Test (PST). The PTG was created by the Naval Special Warfare Center and the Naval Special Warfare Preparatory School.

.PRACTICING THE PST

If you are preparing for the PST, you should occasionally do a practice or mock PST. Simulate actual PST conditions as much as possible, including recovery periods between events and strict standards of performance. Fine-tune your nutrition and warm-up strategies. Optimize your pacing to get the overall best results. You might use results to adjust your training paces and reps for run, swim, and push-sit-pull workouts. Do not practice too often. Every 4-6 weeks should be sufficient.

You want to give your body a chance to adapt to training before you test, and you don't want to disrupt your normal training schedule too often. Choose a day for a mock PST and determine how to modify your other workouts for the week. There is no perfect way to do this but one suggestion is to do the mock PST on a day you normally do your Long Interval workout for running or swimming. You might shorten your workouts the day before (e.g., LSD) so you are not too tired. Tapering improves performance but different people respond best to different tapers, so that is something else to figure out as you practice. After several weeks of training and a couple of mock PSTs, you should have a pretty good idea of where you are, what you need to work on most, and how ready you are for an actual PST.

.GENERAL TRAINING GUIDLINES

Key points to training

1. Keep it simple
2. Use proper technique (get coaching from qualified sources if necessary)
3. Develop the whole body, especially the parts known to be vulnerable to injury

Your workouts should be

1. Planned, structured, organized
2. Balanced and well-rounded
3. Applied gradually and consistently
4. Specific to the demands of BUD/S or BCT

The Naval Special Warfare Physical Training Guide is designed to assist anyone who wants to improve fitness in order to take and pass the Physical Screening Test (PST) and succeed at Basic Underwater Demolition/SEAL (BUD/S) or Basic Crewman Training (BCT).

This PTG provides information about the type of training required to properly prepare for the rigors of BUD/S or BCT, and it offers a training template that will help a person with average fitness train effectively and minimize the risk of injury. A 26-week example is provided, but the template can be modified to suit individual needs and extended indefinitely.

Most of your cardiovascular exercise should focus on running and swimming. Resistance training targeting the whole body should be performed to develop the optimal muscular strength and endurance to resist injury and succeed at BUD/S or BCT. Specific emphasis on push-ups, sit-ups, and pull-ups will be necessary to achieve the required standards for the PST. Cross-training such as cycling, rowing, or hiking will complement and supplement your basic training. Work to achieve balanced fitness, with the optimal combination of endurance, strength, mobility, and flexibility. Work to improve your unsatisfactory qualities, and don't just focus on the things you're good at.

Weekly workout summary

1. 2 Long Slow Distance workouts for both running and swimming
2. 1 Long Interval workout for both running and swimming
3. 1 Short Interval workout for both running and swimming
4. 2 Strength Training Sessions for upper body, core, and lower body
5. Multiple stretching/flexibility sessions
6. Focus on injury resistance
7. Occasional cross-training

.26 WEEK TRAINING SCHEDULE

The weekly format tables provide samples of how you might arrange your weekly training schedule to combine all workouts for the first 26 weeks as well as for longer periods (even several years). You want to create balance considering how different workouts may interfere with each other, but results vary among different trainees so construct a schedule that works for you. If you run and swim on the same day, you can do either one first. If you lift weights on a day you run or swim, you can lift before or after running or swimming.

It may be preferable to split a day into morning and afternoon/evening sessions to allow better

recovery, but if that is not practical, do a single session. Worry more about completing your workouts every week rather than worrying about the exact schedule. Over time, make adjustments if necessary to the days you do specific workouts, but keep following the general progressions for increasing your running, swimming, lifting, and calisthenics. Maintain your commitment to train as effectively as possible to prepare for entering the SEAL or SWCC pipeline.

WEEKLY FORMAT
WEEKS 1-26 (SAMPLE #1)

Mon	Tue	Wed	Thr	Fri	Sat	Sun
Run LSD 1	Swim LI	Run SI	Run LSD 2	Run LI	Swim SI	Cross Train
Swim LSD 2	Lift U/C/L	Lift C	Swim LSD 1	Lift U/C/L	Lift C	
P/S/P		P/S/P	P/S/P	Cross Train	P/S/P	
		Cross Train				

SI = Short Intervals; LI = Long Intervals; LSD 1 is a longer session; LSD 2/3 are shorter; U = Upper Body; C = Core; L = Lower Body; P/S/P = Push-up, Sit-up, Pull-up

WEEKLY FORMAT
WEEKS 1-26 (SAMPLE #2)

Mon	Tue	Wed	Thr	Fri	Sat	Sun
Run LSD 1	Swim LI	Run SI	Run LSD 2	Swim LSD 1	Run LSD 1	Cross Train
Swim LSD 2	Lift L	Lift C	Swim SI	Lift L	Lift C	
Lift U/C	P/S/P	P/S/P	Lift U/C	P/S/P	P/S/P	
	Cross Train			Cross Train		

SI = Short Intervals; LI = Long Intervals; LSD 1 is a longer session; LSD 2/3 are shorter; U = Upper Body; C = Core; L = Lower Body; P/S/P = Push-up, Sit-up, Pull-up

WEEKLY FORMAT
WEEKS GREATER THAN 26 (SAMPLE #1)

Mon	Tue	Wed	Thr	Fri	Sat	Sun
Run LSD 1	Swim LI	Run SI	Run LSD 2	Run LI	Run LSD 3	P/S/P
Swim LSD 2	Lift U/C/L	Swim LSD 3	Swim LSD 1	Lift U/C/L	Swim SI	Cross Train
P/S/P		Lift C	P/S/P		Lift C	

SI = Short Intervals; LI = Long Intervals; LSD 1 is a longer session; LSD 2/3 are shorter; U = Upper Body; C = Core; L = Lower Body; P/S/P = Push-up, Sit-up, Pull-up

WEEKLY FORMAT WEEKS GREATER THAN 26 (SAMPLE #2)						
Mon	**Tue**	**Wed**	**Thr**	**Fri**	**Sat**	**Sun**
Run SI	Run LSD 3	Run LI	Run LSD 2	Swim LSD 1	Run LSD 1	P/S/P
Swim LSD 2	Swim LI	Swim LSD 3	Swim SI	Lift L	Lift C	Cross Train
Lift U/C	Lift L	Lift C	Lift U/C		P/S/P	
		P/S/P				
SI = Short Intervals; LI = Long Intervals; LSD 1 is a longer session; LSD 2/3 are shorter; U = Upper Body; C = Core; L = Lower Body; P/S/P = Push-up, Sit-up, Pull-up						

.WORKOUTS

Warm-up (WU), Active Recovery (AR) and Cool-down (CD)

Every workout should begin with a warm-up. Even for LSD workouts, where the intensity will be moderate, you should spend several minutes specifically preparing to improve the quality of the workout. Include some dynamic stretching, some easy jogging or swimming, and even some bursts of speed. For Interval sessions, your warm-up should be long and thorough. Your total warm-up distance may be as great as the total distance you cover during the work intervals (2-4 miles for running and 800-1600 yards for swimming). Include dynamic stretching, drills, easy jogging or swimming, and several high-intensity bursts of speed that last 30 seconds or longer.

For Interval training, the time spent between work intervals must include active recovery. Spend at least half the recovery time jogging/walking briskly or swimming easily. This will maintain blood flow to the muscles, deliver oxygen and nutrients and remove waste, allowing you to perform at higher intensity during the work periods.

After your workout, include a cool-down period. This means a few minutes of easy jogging or swimming after LSD sessions, and more extended work to gradually return to baseline after an intense interval session. For cool-down, you may choose to do a cross-training activity like cycling instead of running or swimming. Your total distance of warm-up, cool-down, and active recovery for all workouts may be 1/3 to 1/2 of your total training distance so it is important to give these aspects proper consideration and perform them with as much attention to detail as the actual workouts. The tables below provide a sample of how your total run and swim distances (all workouts) might gradually increase over several weeks.

Long Slow Distance (LSD)

The intensity of LSD work is low to moderate, so your pace should feel somewhat relaxed. These workouts build endurance and provide relative recovery between more intense sessions. To determine the appropriate intensity, use the Talk Test. You should be able to talk comfortably in short sentences while training, drawing breath between phrases. If you can't speak, you are working too hard, and if you can speak continually, you are not working hard enough.

For LSD workouts, focus more on duration than intensity. Forty minutes of continual running or swimming is typical. A beginner may need to start at twenty minutes, and someone who is very fit might perform 90 minutes of continuous movement in one session. A practical goal is to build up to comfortably running 8-10 miles or swimming 1.5-2 miles without stopping.

On a weekly basis, try to perform two LSD sessions for running and swimming. Make one a longer session and the other a shorter session, but keep the pace about the same (don't try to go much harder on the shorter session because it is shorter. There are Interval sessions for higher intensity). It is possible to do more than two LSD sessions for running or swimming or both, but that should come after many weeks of training. To sustain long term improvement and avoid injury, it is important to start with a modest training volume and then gradually but consistently add mileage/yardage. It has been suggested that total work be increased no more than 10% per week. Think of that as a maximum, with 5-8% being more ideal.

Long Intervals (LI)

The two tables below provide sample schedules for Long Interval running and swimming workouts over 26 weeks. You can follow the schedules exactly as they are or modify them to suit your needs, as long as you follow the same basic structure and are careful not to increase your total mileage/yardage too quickly or your intensity too severely. Beyond 26 weeks, don't increase the amount of Interval Training (you can still work on getting faster). You can add more LSD work if appropriate, or add more cross training.

These sessions typically involve up to 30 minutes of total work (not including recovery) in 1-4 intervals. These intervals typically involve moving for approximately 7-20 minutes without stopping at a pace approximately 90-95% of the maximal pace you could hold for that duration.

Here is a simple example for running. If you can run 1.5 miles in 9:00 (6:00/mile pace), your LI running workouts would be around 6:20-6:40/mile pace. The workout should be very demanding but not totally exhausting. On a scale of 1-10, with 10 being the greatest effort possible, the workout should feel like 8-9. If you are not sure what your pace should be, don't overthink it. Work hard and try to get faster over time.

A good place to start for Long Interval workouts is 2 x 1 mile for running and 2 x 400 yards for swimming. Over several weeks, increase the total work to 4-4.5 miles (running) and 16-1800 yards (swimming). Use different combinations of total intervals (1-4) of various lengths: 1, 1.25, 1.5, 2, or 3 miles for running and 400, 500, 600, 800, and 1200 yards for swimming. When performing more than one repetition, allow sufficient recovery between repetitions so you can maintain the desired intensity of 90-95% of maximal pace.

A reasonable recovery period is generally 7-10 minutes, depending on how long or intense the work period is. During this time, use active recovery: keep moving at a low intensity (slow jog or brisk walk for running or an easy stroke for swimming). Come to a complete stop only long enough to get a drink, stretch, etc.

RUNNING LONG INTERVALS: 26 WEEK SAMPLE SCHEDULE (MILES)					
		Intervals			
		Recovery Period: 7-10 minutes			
Week	Total Miles	1st	2nd	3rd	4th
1	2	1	1		
2	2	2			
3	2.25	1.25	1		
4	2.25	1	1.25		
5	2.5	1.5	1		
6	2.5	1	1.5		
7	2.75	1.5	1.25		
8	2.75	1.25	1.5		
9	3	1.5	1.5		
10	3	3			
11	3.25	1.25	1	1	
12	3.25	1	1	1.25	
13	3.5	1.5	1	1	
14	3.5	1	1.5	1	
15	3.75	1.5	1.25	1	
16	3.75	1.25	1.25	1.25	
17	4	3	1		
18	4	2	2		
19	4	1	1	1	1
20	4	1	3		
21	4.5	2	1.5	1	
22	4.5	1.5	1.5	1.5	
23	4	2	2		
24	4.5	2	1.5	1	
25	4	1	1	1	1
26	4.5	1.5	1.5	1.5	
>26	4-4.5				

SWIMMING LONG INTERVALS• 26 WEEK SAMPLE SCHEDULE (YARDS)					
		Intervals			
		Recovery Period• 7-10 minutes			
Week	Total Yards	1st	2nd	3rd	4th
1	800	400	400		
2	800	800			
3	900	500	400		
4	900	400	500		
5	1000	600	400		
6	1000	400	600		
7	1100	600	500		
8	1100	500	600		
9	1200	600	600		
10	1200	1200			
11	1300	500	400	400	
12	1300	400	400	500	
13	1400	600	400	400	
14	1400	400	600	400	
15	1500	600	500	400	
16	1500	500	500	500	
17	1600	1200	400		
18	1600	800	800		
19	1600	400	400	400	400
20	1600	400	1200		
21	1800	800	600	400	
22	1800	600	600	600	
23	1600	800	800		
24	1800	800	600	400	
25	1600	400	400	400	400
26	1800	600	600	600	
>26	16-1800				

Short Intervals (SI)

The two tables below provide sample schedules for Short Interval running and swimming workouts over 26 weeks. You can follow the schedules exactly as they are or modify them to suit your needs, as long as you follow the same basic structure and are careful not to increase your total mileage/yardage too quickly or your intensity too severely. Beyond 26 weeks, don't increase the amount of Interval Training (you can still work on getting faster). You can add more LSD work if appropriate, or add more cross training. These sessions alternate short, intense work intervals with periods of recovery.

Typical formats include running 400m (1/4 mile) repeats or swimming 100-yard repeats, allowing a recovery period of 2-2.5 times the amount of time it takes to perform the work interval. Initially, your intensity or pace should be slightly faster than the pace of your most recent 1.5-mile run or 500-yard swim. For running, your 400m interval pace should be about 4 seconds faster than your base pace, and for swimming, your 100-yard interval pace should be 2 seconds faster than your base.

For example, if you recently completed a 1.5-mile run in 10:30 (1:45 per 400m or 1/4 mile), your SI training pace should be about 1:41 per 400m. If you completed a 500-yard swim in 10:30 (2:06 per 100 yards), your SI intervals should be approximately 2:04 per 100yds. These are just estimated paces to get you started, and probably won't seem very difficult for only four intervals. As your fitness and experience improve, you can go faster.

Your first Short Interval workout should consist of 4 repeats, and build progressively toward completing 8 intervals. Do not run or swim more than 8 intervals during a Short Interval session. When you can complete all 8 intervals at high intensity, work on gradually performing the intervals a little faster each week. Work on consistency, trying to keep little variation between your fastest and slowest interval and pacing yourself to be fastest at the end of the workout.

A note on interval variations

For variety, you can change the interval length for different workouts. For running, instead or in addition to 400m (1/4-mile) intervals, use 200m, 300m, 600m, or 800m intervals. For swimming, supplement 100-yard intervals with 50-, 75-, 150-, or 200-yard intervals. Use any combination (they don't have to be all the same) that add up to no more than 3200m (2 miles) for running and 800 yards for swimming. Allow enough recovery time after each interval to maintain the proper work intensity (2-2.5 x the work time). To promote faster, more complete recovery, use active recovery.

RUNNING SHORT INTERVALS: 26 WEEK SAMPLE SCHEDULE (METERS)									
		Intervals							
		Recovery Period: 2-2.5 x the work time							
Week	Total Meters	1st	2nd	3rd	4th	5th	6th	7th	8th
1	1600	400	400	400	400				
2	1600	200	400	400	400	200			
3	1800	400	400	400	200	200	200		
4	1800	200	400	600	400	200			
5	2000	400	400	400	400	400			
6	2000	600	400	400	200	200	200		
7	2200	400	400	400	400	200	200	200	
8	2200	600	400	400	400	200	200		
9	2400	400	400	400	400	400	400		
10	2400	600	600	300	300	300	300		
11	2600	400	400	400	400	400	200	200	200
12	2600	200	600	200	600	200	600	200	
13	2800	400	400	400	400	400	400	400	
14	2800	800	400	400	300	300	300	300	
15	2800	600	600	600	400	400	200		
16	2800	400	600	800	600	400			
17	3000	600	400	400	400	300	300	300	300
18	3000	600	600	600	600	600			
19	3000	300	300	300	600	600	300	300	300
20	3000	800	600	400	300	300	300	300	
21	3200	400	400	400	400	400	400	400	400
22	3200	400	400	800	800	400	400		
23	3200	400	400	400	400	400	400	400	400
24	3200	200	400	600	800	600	400	200	
25	3200	800	800	800	800				
26	3200	400	400	400	400	400	400	400	400
>26	3200								

SWIMMING SHORT INTERVALS: 26 WEEK SAMPLE SCHEDULE (YARDS)									
		Intervals							
		Recovery Period: 2-2.5 x the work time							
Week	Total Yards	1st	2nd	3rd	4th	5th	6th	7th	8th
1	400	100	100	100	100				
2	400	50	100	100	100	50			
3	450	100	100	100	50	50	50		
4	450	50	100	150	100	50			
5	500	100	100	100	100	100			
6	500	150	100	100	50	50	50		
7	550	100	100	100	100	50	50	50	
8	550	150	100	100	100	50	50		
9	600	100	100	100	100	100	100		
10	600	150	150	75	75	75	75		
11	650	100	100	100	100	100	50	50	50
12	650	50	150	50	150	50	150	50	
13	700	100	100	100	100	100	100	100	
14	700	200	100	100	75	75	75	75	
15	700	150	150	150	100	100	50		
16	700	100	150	200	150	100			
17	750	150	100	100	100	75	75	75	75
18	750	150	150	150	150	150			
19	750	75	75	75	150	150	75	75	75
20	750	200	150	100	75	75	75	75	
21	800	100	100	100	100	100	100	100	100
22	800	100	100	200	200	100	100		
23	800	100	100	100	100	100	100	100	100
24	800	50	100	150	200	150	100	50	
25	800	200	200	200	200				
26	800	100	100	100	100	100	100	100	100
>26	800								

WEEKLY RUNNING DISTANCES: 26 WEEK SAMPLE SCHEDULE (MILES)							
Week	**LSD 1**	**LSD 2**	**LSD 3**	**LI**	**SI**	**WU/CD**	**Total Miles**
1	4	2		2.0	1.0	10	19
2	4	2		2.0	1.0	10	19
3	4.5	2		2.3	1.1	10	20
4	4.5	2		2.3	1.1	10	20
5	5	2.5		2.5	1.3	10	21
6	5	2.5		2.5	1.3	10	21
7	5.5	2.5		2.8	1.4	10	22
8	5.5	2.5		2.8	1.4	10	22
9	6	3		3.0	1.5	10	24
10	6	3		3.0	1.5	10	24
11	6.5	3		3.3	1.6	10	24
12	6.5	3		3.3	1.6	10	24
13	7	3.5		3.5	1.8	10	26
14	7	3.5		3.5	1.8	10	26
15	7.5	3.5		3.8	1.8	10	27
16	7.5	3.5		3.8	1.8	10	27
17	8	4		4.0	1.9	10	28
18	8	4		4.0	1.9	10	28
19	8.5	4		4.0	1.9	10	28
20	8.5	4		4.0	1.9	10	28
21	9	4.5		4.5	2.0	10	30
22	9	4.5		4.5	2.0	10	30
23	9.5	4.5		4.0	2.0	10	30
24	9.5	4.5		4.5	2.0	10	31
25	10	5		4.0	2.0	10	31
26	10	5		4.5	2.0	10	32
>26	10+	5+	3+	4-4.5	2.0	10+	34+
All values are approximate. LSD 1 is a longer session; LSD 2/3 are shorter.							

WEEKLY SWIMMING DISTANCES: 26 WEEK SAMPLE SCHEDULE (YARDS)							
Week	**LSD 1**	**LSD 2**	**LSD 3**	**LI**	**SI**	**WU/CD**	**Total Yards**
1	1600	800		800	400	4000	7600
2	1600	800		800	400	4000	7600
3	1800	800		900	450	4000	7950
4	1800	800		900	450	4000	7950
5	2000	1000		1000	500	4000	8500
6	2000	1000		1000	500	4000	8500
7	2200	1000		1100	550	4000	8850
8	2200	1000		1100	550	4000	8850
9	2400	1200		1200	600	4000	9400
10	2400	1200		1200	600	4000	9400
11	2600	1200		1300	650	4000	9750
12	2600	1200		1300	650	4000	9750
13	2800	1400		1400	700	4000	10300
14	2800	1400		1400	700	4000	10300
15	3000	1400		1500	700	4000	10600
16	3000	1400		1500	700	4000	10600
17	3200	1600		1600	750	4000	11150
18	3200	1600		1600	750	4000	11150
19	3400	1600		1600	750	4000	11350
20	3400	1600		1600	750	4000	11350
21	3600	1800		1800	800	4000	12000
22	3600	1800		1800	800	4000	12000
23	3800	1800		1600	800	4000	12000
24	3800	1800		1800	800	4000	12200
25	4000	2000		1600	800	4000	12400
26	4000	2000		1800	800	4000	12600
>26	4K+	2K+	1K+	1.6-1.8K	.8K	4K+	14K+

All values are approximate. LSD 1 is a longer session; LSD 2/3 are shorter.

.SPECIAL CONSIDERATIONS

Running

1. Try to do interval training on a measured course, such as a running track. If that is not possible, find a location with a firm, flat surface without traffic that is safe for fast running.
2. Try to do LSD running on a variety of different surfaces or terrains: flat, hilly, firm, and soft – pavement, trails, grass, beaches, even snow.
3. Don't worry about wearing boots when running. If you do run in boots, run only a couple miles a week.

Swimming

1. A pool is desirable for interval training.
2. Take every safety precaution if you train in open water (lake or ocean)
3. Mix free style swimming into your workouts in addition to the Combat Side Stroke. This will increase intensity and promote fitness that will translate to faster CSS swimming. Perform as much as one third of your training using free style, mixed into interval and LSD workouts.
4. Be careful if you include swimming with fins as part of your training. Make sure your ankles are strong and flexible first. About 1000 yards per week with fins is sufficient.

Cross Training

1. You can supplement your run and swim training with cross-training using other cardiovascular activities. Appropriate activities use large muscles and can be performed rhythmically and continuously. Examples include (but are not limited to) cycling, rowing, stair stepping, elliptical machines, and hiking.
2. Use cross-training activities to help build your conditioning base without overtraining (since you don't want to ramp up your running or swimming volume too quickly). Use cross-training to inject a little variety into your routine.
3. When necessary, substitute cross-training for running or swimming. This might happen if you have a minor injury, there is bad weather, or your regular training facility is not available.

.PUSH-UPS, SIT-UPS, AND PULL-UPS

The PST requires you to give maximal effort to perform as many push-ups, sit-ups, and pull-ups as possible in two minutes. This specific performance requires specific preparation (dedicated training to improve max reps for these exercises). The Physical Training Guide emphasizes the importance of balanced training, developing the whole body (upper, core, lower) and training opposing muscle groups equally (push-pull). While it is necessary to focus on push-ups, sit-ups, and pull-ups for the PST, be aware that this may contribute to muscle imbalances that affect the injury risk of BUD/S and BCT candidates. It is important to be economical and efficient when training for push-ups, sit-ups, and pull- ups to avoid overtraining and creating imbalances. A good rule of thumb is to perform no more than 200 push-ups or sit-ups and no more than 50 pull-ups in a single day, and no more than 1000 push-ups or sit- ups and no more than 250 pull-ups in a week.

Practical performance goals for the PST are about 100 push-ups and sit-ups and about 20 pull-ups. The basic training method is to start with several small sets and gradually progress towards fewer, larger sets. The total reps will gradually increase, but not beyond the upper limit per day.Recover enough between sets to maintain quality repetitions. Over time, reduce the recovery between sets, without reducing the quality of reps. The push-up, sit-up and pull-up tables provide a specific training

matrix based on your current max. The PST requires fast reps, so occasionally (about once a week) practice doing push-ups, sit-ups, and pull-ups as if you are doing the PST. Determine your current max for each exercise. Work on the rhythm and pacing that will produce your best PST score. Make sure to review the current standards for acceptable technique so all your reps will count when taking the PST.

For the majority of training, follow the guidelines for push-ups, sit-ups, and pull-ups provided below in the Physical Training Guide. This involves moving with control through a full range of motion and emphasizing the eccentric (negative) portion. While it may not be obvious, this will improve your ability to perform the PST, and will also enhance your ability to perform other tasks in BUD/S or BCT and increase your resistance to injury. Focus on progressing through the matrix in the table below with high-quality repetitions.

PUSH-UPS AND SIT-UPS			
	Then Workout Is		
If Max Reps Are	Sets	Reps	Total Reps
<40	5-6	10-15	50-90
40-60	4-5	15-20	60-100
60-80	4-5	20-25	80-125
80-100	3-4	30-40	90-160
>100	3-4	40-50	120-200

PULL-UPS			
	Then Workout Is		
If Max Reps Are	Sets	Reps	Total Reps
<6	5-6	2-3	10-18
6-9	4-5	4-5	16-25
10-12	4-5	5-6	20-30
13-15	3-4	8-10	24-40
>15	3-4	10-12	30-48

.STRENGTH TRAINING

Success in BUD/S and BCT requires a certain amount of strength (though strength does has less effect on success than running or swimming ability). Strength is necessary to perform demanding evolutions during the selection pipeline as well as remain resistant to injury. Developing an effective strength program involves targeting the whole body (upper, core, lower); maintaining balance across opposing muscle groups (push-pull); and targeting muscles known to affect injury risk (including rotator cuff, hamstrings, and torso rotators). Many different programs and methods have been used to improve strength.

Follow these basic recommendations

Keeping in mind the specific needs of BUD/S and BCT, and the necessity of emphasizing running and

swimming during preparation:

1. Use different forms of resistance, including body weight, free weights, and machines
2. Select exercises that target the whole body (upper, core, lower); that create movement in all three planes; that balance opposing muscles (push-pull)
3. Perform movements in a controlled manner through a full Range of Motion (ROM) using proper technique; emphasize negative (eccentric) contractions

It is not necessary to perform multiple sets of each exercise to realize significant gains in strength. One set to momentary muscle failure is generally sufficient. This also leaves time for more exercises to target the whole body. The weight and number of repetitions is not critical, as long as momentary muscle failure is reached. This means completing as many reps as possible with proper form. When you become too fatigued to do another repetition without sacrificing technique, put the weight down. Generally choose a weight you can lift 8-12 times with proper form before failure. On different days for different exercises, choose heavier weight so you finish in fewer reps (4-6), or lighter weight so you finish with more reps (15 or even 20). Changing the weight and reps periodically will increase overall strength under different conditions. Over time, you will be able to lift a given weight for more reps. Here is a hypothetical example of how you might perform an exercise such as the overhead dumbbell press over several workouts: 8x45lbs, 10x40lbs, 6x50lbs, 9x45lbs, 11x40lbs, 7x50lbs, etc. Your actual numbers may vary from this example but in general you do more reps with lighter weights (or fewer reps with heavier weights) as you work towards momentary muscle failure.

During a workout, move from one exercise to the next efficiently. Recover as necessary, but don't waste time. By the same token, don't race. Perform each exercise with the best technique possible. Do the exercises in any order, but alternate between pushing and pulling.

Mix up the order for different workouts on different days. Choose different variations (different forms of resistance) for the same basic movement on different days for different workouts (such as machine chest press one day and dumbbell press another). A whole-body workout should be completed in an hour or less. The entire body can be trained in a single session 2-3x per week, or different regions (upper, core, lower) can be trained separately on different days depending on the time you have or if you want to coordinate strength training with running or swimming. It is possible to do strength training daily as long as each region/muscle group gets 2-3 days of recovery between sessions. Train each region no less than 1x and no more than 3x per week, with the exception of Core. Core exercises such as planks, side plank, and bridge can and should be performed more frequently (4-6x per week).

Training the whole body in one session or by different regions on different days will provide similar results, so the choice is yours depending on what fits your schedule best. There are advantages and disadvantages to strength training before or after a running or swimming workout, so once again do whatever fits your schedule best.

Candidates have asked what will be the effect of combining heavy weights for exercises like bench press or lat pull-downs with many sets of push-ups and pull-ups. Will this cause overtraining? This should not be a problem if the basic recommendations for limiting strength training (weight lifting) to twice per week and calisthenics numbers are kept within the suggested ranges.

Important things to remember when creating a strength workout:

1. Choose exercises for the upper body, trunk, and lower body
2. Choose exercises that create movement in all three planes
3. Choose exercises that create balance (push-pull; right-left; front-back)
4. Movements should be controlled through a full Range of Motion using proper technique
5. Emphasize negative (eccentric) contractions
6. Use multiple variations of each basic movement (e.g., outward push, downward pull)

7. For the trunk, use a variety of static as well as dynamic exercises
8. Be sure to include exercises for the vulnerable or underdeveloped areas
9. Mix up the order of exercises (but alternate push-pull)

Problem areas that are often weak and underdeveloped, and should be targeted to avoid injury:

1. Rotator cuff
2. Mid/lower traps
3. Rhomboids
4. Posterior and medial glutes
5. Hamstrings
6. Tibialis anterior
7. Torso rotators

The movement category tables below provide the basic movement categories for the upper body, trunk, and lower body with examples of exercises using body weight or other forms of resistance (such as dumbbells).

Upper body exercises

Resistance Sources (Examples)		
Movement Categories	**Body Weight Exercises**	**Other External**
Overhead push	Pike push-up	Bar, DB, KB, machine (also lateral or front raise w/ DB)
Overhead pull	Pull-ups, rope climbs	Pull-ups w/ vest, lat pulldown machine
Chest press	Push-ups, clapping push-ups	Bar, DB, KB, machine, push-ups w/ vest (also incline/decline)
Row pull	Horizontal pull-ups (on dip bars)	Bar, DB, KB, machine
Downward push	Dips	Triceps pushdown or kickback, weighted dips, ring dips
Upward pull	Chin-ups	Upright row, curl, shrug
Rotator cuff	N/A	DB, cable, elastic band
Mid/Lower traps	Arm haulers	DB, cable, elastic band
DB = Dumbbells; KB = Kettle bells; BOSU = Stability trainer; RDL = Romanian dead lift; COD = Change of direction		

Trunk exercises

Resistance Sources (Examples)		
Movement Categories	**Body Weight Exercises**	**Other External**
Flexion	Sit-ups, crunches, reverse crunches, knees-to-elbows, leg lever hold	Inclined sit-up, BOSU, stability ball, machine
Extension	Superman, front plank	RDL, platform, machine
Rotation	Leg wipers, Russian twist, scissors, bird dog, scorpion	Cable wood chopper, medicine ball toss
Lateral	Side plank	Single arm push or pull w/ DB or KB (hold torso stable)
DB = Dumbbells; KB = Kettle bells; BOSU = Stability trainer; RDL = Romanian dead lift; COD = Change of direction		

Lower body exercises

Resistance Sources (Examples)		
Movement Categories	**Body Weight Exercises**	**Other External**
Hip extension	Vertical jumps, broad jumps	Squat, leg press, deadlift, KB swing, box jump
Hip flexion	Sit-ups, flutter kicks, good morning darlings	Elastic band, cable, machine
Hip abduction	Side plank, agility/COD, carioca, side hops (1- or 2-leg)	Elastic band, cable, machine
Knee extension	Vertical jumps, squats, lunges	Machine, squat, leg press, weighted lunge, box jump, dead lift
Knee flexion	Bridges, manual resistance (provided by partner)	Elastic band, cable, machine
Ankle extension	Vertical jumps, broad jumps	Weighted heel raise, box jump
Ankle flexion	Heel walks	Elastic band, cable, machine
Foot abduction/ adduction	Balance, agility/COD, 1-leg side hops	Elastic band, cable
DB = Dumbbells; KB = Kettle bells; BOSU = Stability trainer; RDL = Romanian dead lift; COD = Change of direction		

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