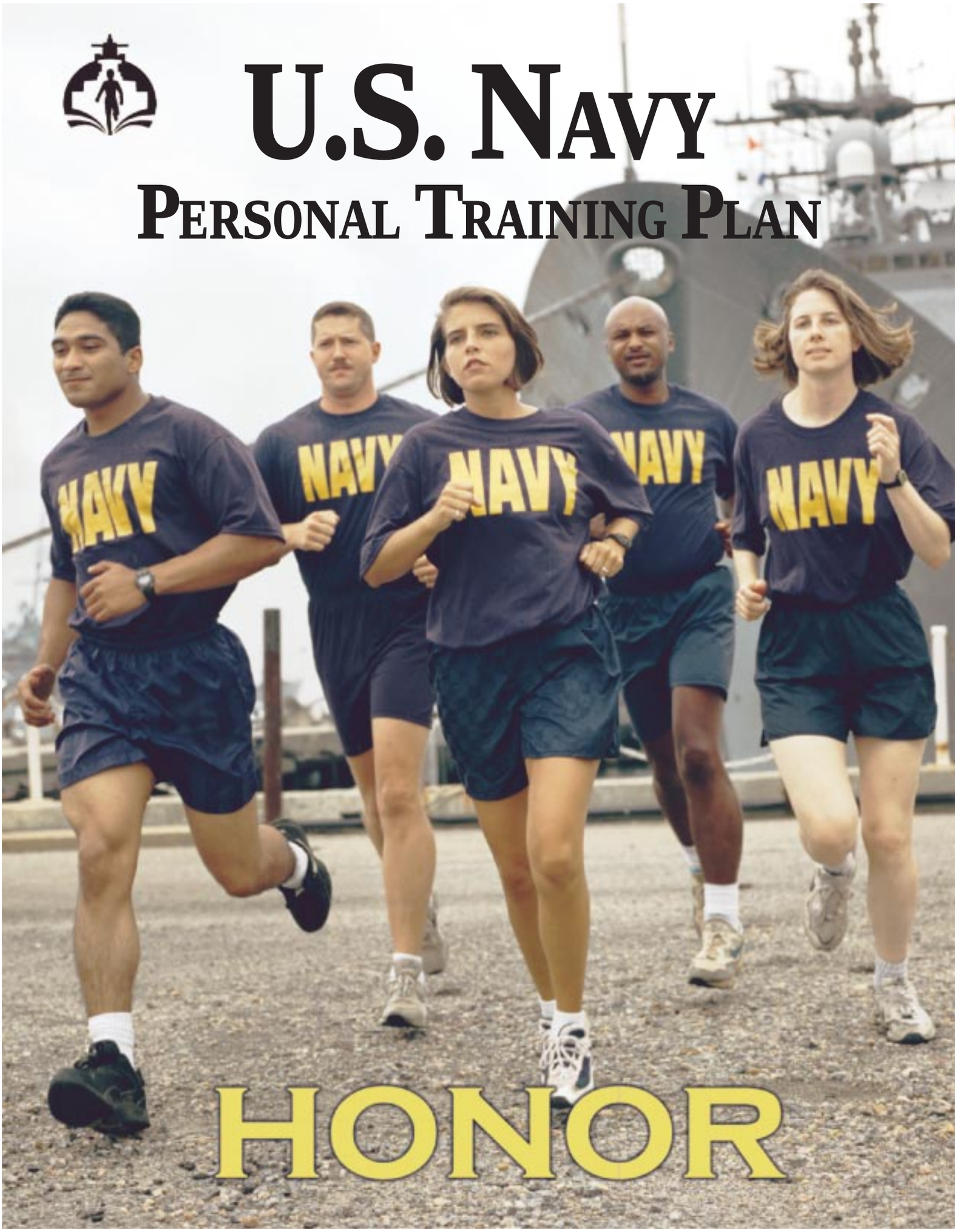
U.S. Navy
Personal Training Plan



ACKNOWLEDGMENTS

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Reviewed and Approved

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Commanding Officer

U.S. Navy Personal Training Plan
(NEHC-TM 6100.98-4, October 1998)

U.S. Navy

Personal Training Plan

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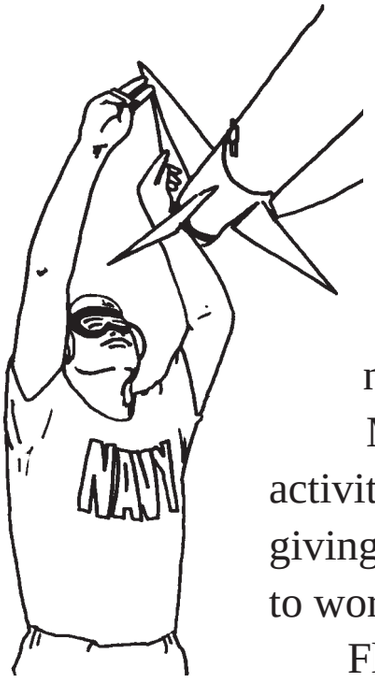
Physical Fitness Overview



Physical fitness is an essential and critical component of readiness. Fitness is much more than the absence of disease. It is a state of being that includes strong, flexible muscles and an efficient system for getting oxygen and nutrients to the body.

Muscular strength and endurance activities help your muscles become stronger, giving them both the raw strength and ability to work repeatedly without undue fatigue.

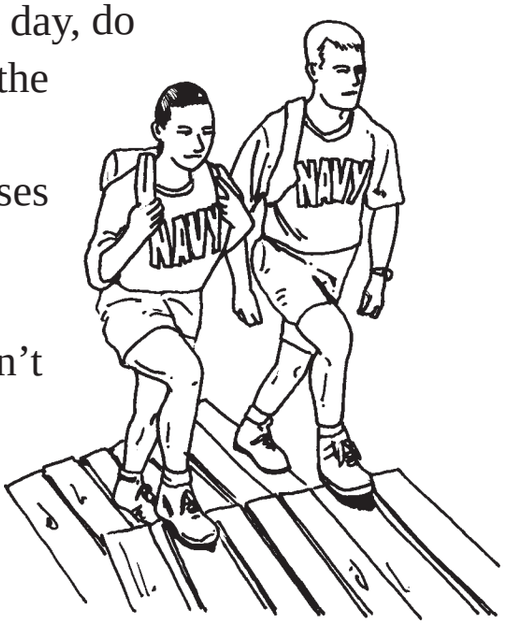
Flexibility or stretching exercises are necessary to prevent injury to the muscles and joints, and to allow the muscles to work efficiently through a full range of motion.

Cardiovascular activities, such as running and swimming, help the heart, lungs and blood vessels become more effective at delivering to the muscles what they need to function—oxygen and glucose.

Physical fitness is a state of being that must be maintained. You have to specifically exercise the muscles and joints where you want improvement. It is both a

science and an art, requiring effort and balance. It is also achievable by everyone, despite body type, family health history, and past habits.

You may or may not be ready to make all the changes it takes to achieve maximum fitness, but you're probably ready to do **something**. Each day, do what you can—walk around the block, do a few push-ups, do some of the stretching exercises shown on page 7.



And on days when you aren't able to get moving, don't get discouraged. Just plan ahead for the next day. Building new habits, even positive ones, takes some work, so don't get discouraged by temporary setbacks.

Physical fitness can be achieved working by yourself, with your family, or with your friends. Many people find working out with a partner to be motivating. Find someone who is at about the same fitness level as you, and jointly make a commitment.

Stretching/Injury Prevention

Stretching is important for everyone, from the Olympic athlete to the most committed couch potato. Stretching makes the muscles, ligaments and tendons more flexible and elastic-like. Rather than tearing or breaking when under strain, a flexible muscle is more likely to stretch and give. Flexibility prevents injuries, like back injuries and sprained ankles, and helps you perform everyday tasks with greater ease.

Stretching is joint specific—you have to target each muscle group and joint separately. The stretches on page 7 should be done at least 5 days a week, and every day is better. Develop a routine where you do each stretch 1 to 3 times for at least 10 to 30 seconds. Set aside time and get in the habit of doing them.

It's best to warm up first by walking, jogging, etc. for 3 to 5 minutes. Then stretch. Afterwards do your workout or play your sport, like softball, volleyball, or basketball.

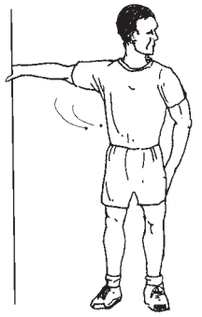
Then stretch again after you've cooled down and your heart rate is almost back to normal. Never stretch a cold muscle. Always warm up first!

Also, always do slow static stretching. Don't swing or bounce. Stretch until you feel tension, but not pain.

Neck Stretch

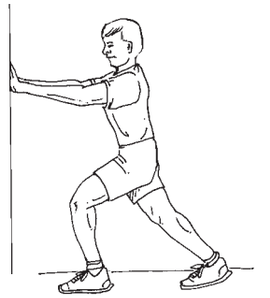
Upper Back Stretch

Triceps Stretch

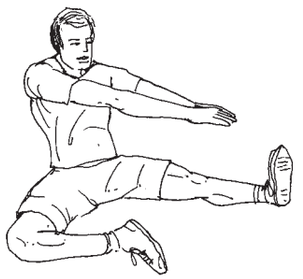


Chest & Biceps Stretch

Butterfly (Groin) Stretch



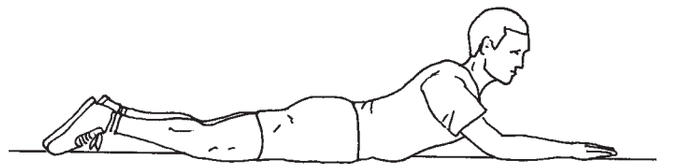
Calf Stretch



Hamstring Stretch

Lower Back Stretch (1 knee)

Quadriceps Stretch



Back Extension Stretch

Cardiovascular Fitness

Cardiovascular fitness is the result of doing activities that exercise your heart, lungs and blood vessels. The type activity you need to achieve cardiovascular fitness is aerobic, which uses large muscle groups at an intensity that can be sustained for a long period of time.

Activities such as running, jogging, brisk walking, stair climbing, rowing, swimming, aerobic dance, and bicycling should make you work hard enough that you're breathing harder and perspiring some. A good rule of thumb is that you can carry on a light conversation, but can't sing. A more exact way to gauge your intensity is to aim for your target heart rate. If you don't know how to determine what your heart rate should be, ask your PRT coordinator or a fitness professional to help.

Your workout should last at least 20 minutes, not including your warm-up, cool down, or stretching.

To be sure you're getting a good workout, follow the *FITT* Principle:

- **F** Frequency: 3-5 times a week
- **I** Intensity: Target Heart Rate, or Talk but can't Sing
- **T** Time: 20 to 60 minutes of aerobic activity
- **T** Type of Activity: Something you enjoy

EXPLANATION OF AEROBICS POINTS SYSTEM

On the following two pages is a listing for aerobic points you can earn by walking, running or swimming. The points were developed, along with scoring for many other activities, by Dr. Kenneth Cooper, and first appeared in his best-seller book ***Aerobics***. The system was updated in Dr. Cooper's 1982 book ***The Aerobics Program for Total Well-Being***. The points are the same for men and women.

Your goal should be to work up to earning at least 30 points per week. You may not be there now. If not, be patient. If you're interested in activities other than walking, running or swimming, or in other distances and times, refer to ***The Aerobics Program for Total Well-Being***.

To record your points, get a small calendar or notebook. Each day, record your activity and how many points you earned. Your personal goals will depend on what you want to accomplish. If training for a sporting event, your goals will be higher than if you are just beginning to work out. Just 10 points a week will result in significant improvements for the previously sedentary person. The athlete may earn 100 or more points a week. A reasonable goal is to earn 6 points five days a week.

Cooper Aerobics Points for Running/Fast Walking (Men and Women)

1.0 mile

over		20:01 min	0
20:00	-	15:01 min	1
15:00	-	12:01 min	2
12:00	-	10:01 min	3
10:00	-	8:01 min	4
8:00	-	6:41 min	5
6:40	-	5:44 min	6
under		5:43 min	7

1.5 miles

over		45:01 min	0
45:00	-	30:01 min	½
30:00	-	22:31 min	2
22:30	-	18:01 min	3½
18:00	-	15:01 min	5
15:00	-	12:01 min	6½
12:00	-	10:01 min	8
10:00	-	8:35 min	9½
under		8:34 min	11

2.0 miles

over		40:01 min	1
40:00	-	30:01 min	3
30:00	-	24:01 min	5
24:00	-	20:01 min	7
20:00	-	16:01 min	9
16:00	-	13:21 min	11
13:20	-	11:27 min	13
under		11:26 min	15

2.5 miles

over		50:01 min	1½
50:00	-	37:31 min	4
37:30	-	30:01 min	6½
30:00	-	25:01 min	9
25:00	-	20:01 min	11½
20:00	-	16:41 min	14
16:40	-	14:19 min	16½
under		14:18 min	19

3.0 miles

over		1hr 1 sec	2
1:00:00	-	45:01 min	5
45:00	-	36:01 min	8
36:00	-	30:01 min	11
30:00	-	24:01 min	14
24:00	-	20:01 min	17
20:00	-	17:10 min	20
under		17:09 min	23

4.0 miles

over		1:20:01	3
1:20:00	-	1:00:01	7
1:00:00	-	48:01 min	11
48:00	-	40:01 min	15
40:00	-	32:01 min	19
32:00	-	26:41 min	23
26:40	-	22:53 min	27
under		23:00 min	31

5.0 miles

over		1:40:01	4
1:40:00	-	1:15:01	9
1:15:00	-	1:00:01	14
1:00:00	-	50:01 min	19
50:00	-	40:01 min	24
40:00	-	33:21 min	29
33:20	-	28:35 min	34
under		28:34 min	39

6.0 miles

over		2:00:01	5
2:00:00	-	1:30:01	11
1:30:00	-	1:12:01	17
1:12:00	-	1:00:01	23
1:00:00	-	48:01 min	29
48:00	-	40:01 min	35
40:00	-	34:19 min	41
under		34:18 min	47

Cooper Aerobics Points for Swimming
(Men and Women)

		200 Yards				**900 Yards**	
over		6:41 min	0	over		30:01 min	0
6:40	-	5:01 min	1.25	30:00	-	22:31 min	7.13
5:00	-	3:21 min	1.67	22:30	-	15:01 min	9.00
under		3:20 min	2.50	under		15:00 min	12.75
		400 Yards				**1000 Yards**	
over		13:21 min	0	over		33:21 min	0
13:20	-	10:01 min	2.50	33:20	-	25:01 min	8.25
10:00	-	6:41 min	3.33	25:00	-	16:41 min	10.33
under		6:40 min	5.00	under		16:40 min	14.50
		500 Yards				**1200 Yards**	
over		16:41 min	0	over		40:01 min	0
16:40	-	12:31 min	3.12	40:00	-	30:01 min	10.50
12:30	-	8:21 min	4.17	30:00	-	20:01 min	13.00
under		8:20 min	6.25	under		20:00 min	18.00
		600 Yards				**1400 Yards**	
over		20:01 min	0	over		46:41 min	0
20:00	-	15:01 min	3.75	46:40	-	35:01 min	12.75
15:00	-	10:01 min	5.00	35:00	-	23:21 min	15.67
under		10:00 min	7.50	under		23:20 min	21.50
		700 Yards				**1600 Yards**	
over		23:21 min	0	over		53:21 min	0
23:20	-	17:31 min	4.88	53:20	-	40:01 min	15.00
17:30	-	11:41 min	6.33	40:00	-	26:41 min	18.33
under		11:40 min	9.25	under		26:40 min	25.00
		800 Yards				**1800 Yards**	
over		26:41 min	0	over		1:00:01	0
26:40	-	20:01 min	6.00	1:00:00	-	45:01 min	17.25
20:00	-	13:21 min	7.67	45:00	-	30:01 min	21.00
under		13:20 min	11.00	under		30:00 min	28.50

The Cooper Aerobics Points System, from
The Aerobics Program for Total Well-Being

Muscular Strength

Developing muscular strength is very important for several reasons, including improved performance, prevention of injuries, enhanced personal appearance, maintenance of good posture, and even increased bone mass.

People use many different methods to develop strength, including free weights, resistance machines, and body weight activities such as push-ups, curl-ups and pull-ups. Regardless of the method, improvement will result only through overloading the muscle in a progressive manner. Overload can be achieved by any combination of the following:

Increase the amount of weight lifted;

Increase the repetitions in a set;

Increase the number of sets; and

Decrease the rest time between sets.

Women should not be afraid of resistance training. Only under rare circumstances do women develop much bulk from lifting weights. Most women will experience noticeable muscle toning, greater muscle definition, and increases in strength.

On the next page are some tips to help you plan your strength training workout.

Strength Training Tips

- Work muscles that are opposite to each other, that is on each side of a joint
  Example: biceps and triceps
- Perform a minimum of 8-10 separate exercises each workout
- Plan your workouts to last less than 1 hour
- Perform at least one set of 8-12 reps of each exercise
- Perform these exercises at least 2 nonconsecutive days each week
- Use proper technique for each exercise
- Perform each lift through a full range of motion
- Perform both lifting and lowering portion of exercise in a controlled manner
- Maintain a normal breathing pattern. Don't hold your breath
- Work out with a training partner. Never lift heavy free weights without a spotter

Caution About Ergogenic Aids

Some athletes try to gain an advantage by using drugs and other substances, also called ergogenic aids, to enhance performance and accelerate muscle growth. Most do not work at all, and many have significant risk. Every substance with potential benefit carries some dangers. Eating a well-balanced diet can provide you with all the nutrients you need.

On the following pages are guidelines that may help you make decisions about ergogenic aids.

Name	Claims	Comments
Amino Acids 	Increase muscle mass; increase growth hormone production	No valid scientific evidence that individual amino acids or combinations of single amino acids provide any benefit.
Antioxidant Vitamins (C, E) (betacarotene) 	Protect muscles from damage during intensive stress	Research data is not conclusive.
Arginine/ Ornithine 	Increase muscle mass through stimulation of growth hormone	Early studies showed promise, but more recent, studies show no effect.
Bee Pollen 	Enhance recovery from exercise; increase energy level	Studies show no effect on athletic performance. May cause severe allergic reaction.
Caffeine  	Increase endurance performance by increasing the release of free fatty acids, thereby slowing the use of oxygen	Works for some people in middle distance and endurance sports. Banned at high levels by the International Olympic Committee. Side effects include cardiac arrhythmia, and dehydration.
Carbohydrate 	Reduce fatigue by restoring and maintaining blood glucose	Eat a well balanced, high carbohydrate diet; use high carbohydrate foods, beverages and bars to replenish glucose during exercise that lasts **more than** 1 hour.

POSITIVE 
NEGATIVE 

Name		Claims	Comments
Chromium Picolinate		Promote muscle gain and fat loss	Studies to date have been poorly conducted.
Creatine Monohydrate		Increase energy; promote muscle development; burn fat; delay fatigue	May be most useful in short duration power and strength activities. May cause weight gain due to water retention. Safety of long-term use not yet determined.
DHEA		Increase energy levels; decrease body fat; increase intelligence; enhance memory	Significant side effects. Long-term effects are not known. Banned in Olympic and NCAA competition.
Ginseng		Enhance energy; improve concentration; enhance weight loss	Well-designed studies have not shown the promised effects.
L-carnitine		Increase aerobic power and energy; reduce body fat	Claims have not held up to well-controlled studies. Not well absorbed. Large doses may cause diarrhea.
Ma Huang (ephedrine)		Increase energy; enhance weight loss	A stimulant with many side effects. The FDA warning: don't buy products with ma huang or ephedrine. Deaths have been reported using these products.
Smilax		Increase testosterone, muscle mass, and strength	No valid research evidence to support claims.

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For information on ordering additional copies or obtaining an 8 1/2 x 11” copy of the U.S. Navy Personal Training Plan (NEHC-TM 6100.98-4), visit the Navy Environmental Health Center Homepage:

http://www-nehc.med.navy.mil

See Health Promotion Section