



Presents the

**MUSCLE
& FITNESS**

Beginning Bodybuilding Guide



Message From the Master Blaster



So you've decided to take the first step to changing your body and your lifestyle. It's an exciting journey, one that will test your will many times along the way. Those who see their way through and stick to the tenets of training and diet we prescribe will undergo an amazing transformation. Just two months from now, at the end of this program, you'll feel stronger and more energetic, and you'll notice some wonderful changes taking place in your body.

No, you won't get muscular overnight, but with patience and con-

sistency, you'll get there. Keep in mind as you undertake this journey that the benefits you'll enjoy from the bodybuilding lifestyle will extend well beyond a great physique, and a stronger mental constitution. You'll be healthier — and that's a fact proven through science. Just consider a few of the health benefits associated with regular exercise: increased cardiovascular health, delayed signs of aging, enhanced immunity, stress reduction, stronger bones and healthier blood.

A bodybuilding and fitness lifestyle will enhance every aspect of your existence, and give you self-respect, self-confidence, self-control and an ultimate sense of achievement. Use our magazine as your tool, and your personal goals as your beacon. I wish you good luck and much success in your bodybuilding endeavors!

Joe Weider

*Joe Weider
Trainer of Champions Since 1930*

Table of Contents

- 3 Basic Training Science**
By Mark Casselman, MS, CSCS
- 4-5 Beginner Workout: Months 1&2**
By Michael Berg, CPT, and Michelle Basta Boubion, CPT
- 6-7 Other Training Essentials**
By Bill Geiger
- 8-16 Exercise Technique**
By Michael Berg, CPT
- 17 Beginner's Guide to Cardio**
By Michelle Basta Boubion, CPT
- 18-21 Nutrition Guidelines**
By Beth Sonnenburg
- 22-23 Tips to Grow On**
By Maureen Meyers Farrar and Bill Geiger

**To subscribe to
Muscle &
Fitness, call
1-800-340-8954
muscle-fitness.com**

Tips to Grow On

Get Motivated

Beginning a new fitness program is an ambitious undertaking. Deciding to get fit is the first step; now you just have to do it. Easier said than done, right? These strategies will keep you on the road to success.

■ **Set specific goals.** You need to establish long-range realistic goals (to compete in a bodybuilding show or reduce your bodyfat in six months, for example). You should also set specific short-term goals. Go to the gym with a plan. Know what you need to do that day and how you plan to accomplish it.

■ **Start slowly.** Overdoing it in the beginning is one of the biggest reasons people quit their fitness program. Start at a relatively low intensity and gradually increase it. Don't jump into an advanced routine or work out too frequently. You may find yourself more frustrated than motivated.

■ **Become a student.** Read books and magazines, and talk with experts about nutrition, training and proper technique. The more you know, the more fun you'll have applying your knowledge and seeing the results of your efforts.

■ **Keep a training log.** Record the technical aspects of your training (sets, reps and weight) as well as the emotional (how did you feel during your workout?). This will give you a way to monitor your progress over time.

■ **Form a habit.** It takes time for something to become a habit, but the more consistent you are in the beginning, the more likely you are to stick with it. Schedule your workout into your day and don't let anything interfere with it.

■ **Be patient.** One of the great things about being a beginner is that almost anything you do is going to produce results. Eventually you'll hit plateaus in your gains, but be patient and stick with it.

■ **Reward yourself.** You've been working hard, so why not reward yourself for your efforts? Whenever you reach a goal, treat yourself to a new CD or a movie. This will help make you feel better about the gains you make — big or small — and the effort you put into your workouts.

Gearing Up

One of the great things about bodybuilding is that you don't need a whole lot of gear to get started. Here are the basics:

Workout clothes: Cotton or breathable synthetic T-shirts and shorts or sweats either absorb or wick away perspiration.

Shoes: Sturdy, comfortable shoes can reduce injury; they'll provide foot and ankle stability and will protect your feet.

Gloves: They'll help provide a better grip on the weights and reduce the formation of calluses.

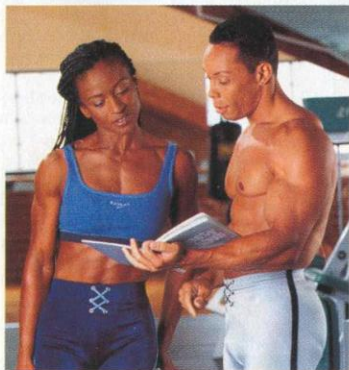
Towel: Wiping someone's sweat off the equipment rates up there with dropping a 25-pound plate on your toe. Be courteous and wipe off your bench when you're done.

Training log: Use a notebook to keep track of your exercises, weights, sets and reps. Chronicling your progress will help you see what works and what doesn't.

Water bottle: Frequent trips to the water fountain aren't sufficient to adequately replenish your fluids. Bring a bottle and try to drink at least 2 cups of water before, during and after your workout.

Deodorant: This should be a given, but you'd be surprised at how many people forget to use it. Be kind to those working out around you and take a swipe or three before your workout.

CD or tape player with earphones: Not a necessity, but some tunes can definitely be a big motivator.



Dream Big

■ You may not realize it, but what you do outside of the gym is just as important as what you do in it. **Muscle growth actually occurs after your workout** as you rest and give your muscles time to recuperate. If you work out too long or too often, you cut into the amount of time needed for muscle growth and repair.

■ **Take a break between workouts** to promote growth. Training 6–7 days per week may be the regimen of professional bodybuilders, but remember, their whole schedule is built around workouts and recovery, usually without the added stress of a full-time job. As a rule of thumb, don't work the same bodypart more than twice a week; once per week is typically sufficient once you're past the beginner stages.

■ **Sleep is your body's chance to recuperate**, so when you deprive it of shut-eye, it doesn't function as effectively. Try to get about eight hours of sleep a night (some people need a little more, others a little less to function).

The Gain Plan

Everyone has experienced soreness at the beginning of a new exercise program. But how much is normal and how much is too much? Evaluate muscle soreness in the hours and days following your workout.

■ **Acute soreness** occurs during and immediately after exercise. It's basically muscle fatigue and usually subsides after your workout.

■ **Delayed-onset muscle soreness** (DOMS), the most common type of soreness, normally occurs 24–72 hours after exercise. It's thought to be caused either by slight microtears in the muscle fiber or the buildup of lactic acid in the muscle. Muscles feel stiff and weak, and symptoms can last for several days, so beginners or anyone coming back from a layoff should take it easy for the first few weeks.

■ **If you feel a sudden, sharp pain, stop exercising immediately.** This usually indicates a more serious injury like a pulled muscle or tendon. Applying ice may help fight inflammation, but if the pain doesn't go away, you may need to seek medical attention.

Designing Your Next Program

■ **After a few months, you'll want to make changes to your routine.** As you become more experienced, add more weight, sets, use intensity techniques like drop sets or change exercises to further stimulate the muscle. Learn to develop a sense of what works best for you and understand that not everybody responds in the same way to particular exercises and workouts. After a while, try new things and change it up to keep your muscles from adapting to a set routine.

■ A good rule of thumb is to **choose multijoint (also called compound) movements to build your foundation.** Compound movements, in which more than one joint is involved in the action, as opposed to single-joint or isolation exercises, work a greater amount of muscle mass. Examples are squats, bench presses, deadlifts and rows.

■ **Start your routine working the larger muscle groups** (legs, chest, back) before training the smaller ones. The latter commonly assist with movements for the former, so fatiguing your triceps, for example, would take away from your chest workout. The larger bodyparts also require more energy and mental focus.

QUICK TIP:

Some basic movements can be done in a variety of ways: with a barbell, dumbbells, cables and even a machine. Eventually, learn how to do them all and use them in your training arsenal.

■ During your workout, **choose exercises that hit a particular bodypart from different angles.** The flat, decline and incline benches allow you to target slightly different areas of your chest, for example, for a more complete workout.

■ **More isn't better in training.** You don't need to do more than 6–8 total high-intensity sets for each muscle group, which is the stimulus required for growth. **M&F**

Beginner Workout: Month 1

■ **The first month is designed** to introduce you to various equipment in your gym while acclimating your muscles to resistance training.

■ **You'll do the following workout** three times per week with at least one day of rest in between (for instance, Monday, Wednesday and Friday), working your entire body each time with a number of machine movements. Why machines? They're relatively safe, easy to learn, and will help you form the neural connections between mind and muscle that'll benefit you when it comes time to make barbell and dumbbell movements the mainstays of your routine.

■ **For these first four weeks**, you may be tempted to add more sets or push to use more weight, but hold yourself back and give your body time to adjust. More isn't necessarily better at this beginning stage; a number of studies have shown that beginning weight trainers don't incur further benefits beyond 1–2 sets per bodypart.

■ **Instead of concentrating on moving more weight**, select a lighter resistance, feel the muscles contract and relax on every rep, and move through a complete range of motion with correct form.

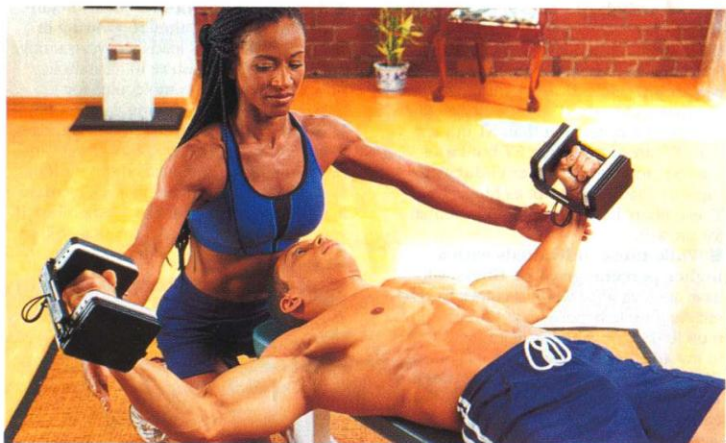
■ **Don't rest longer** than 30–60 seconds between sets.

BODYPART EXERCISE

		SETS	REPS
Legs	Leg Extension	2	12–15
	Lying Leg Curl	2	12–15
Back	Pull-Down to Front	2	12–15
Delts	Dumbbell Lateral Raise	2	12–15
Chest	Pec-Deck Flye	2	12–15
Triceps	Dumbbell Overhead Extension	2	12–15
Biceps	Standing EZ-Bar Curl	2	12–15
Calves	Standing Dumbbell Calf Raise	2	12–15
Abs	Crunch	2	15–20
Cardio	20 minutes at 65%–75% MHR (see pg. 17)		

IMPORTANT NOTE:

For those beginners who choose to work out at home, we provide alternates to the machine exercises on page 16.



Photos of Robert Marling, Sarah Orbanic, Mark Natividad, Charlotte

Beginner Workout: Month 2

■ **In the second month**, you'll add exercises and more thoroughly work individual muscle groups, hitting each bodypart twice weekly in three training sessions.

■ **You'll also learn some of the best basic free-weight exercises:** the squat, row and bench press. Pay careful attention to the exercise descriptions we provide; you may also benefit from asking a trainer at the gym to help you get the form down.

■ **We provide a suggested split** for the week. You can alter it based on your own

schedule, but it's best to keep at least one day of rest in between exercise sessions. Remember, working out is the stimulus for muscle growth, but muscle actually grows at rest, not while you're in the gym.

■ **Form becomes even more crucial** as you learn additional free-weight moves; free weights don't offer the luxury of balancing the weight for you and leading you through the motion like machines do. Practice correct form from the very start. Learning it right the first time is easier than adjusting poor form after months of training.

BODYPART EXERCISE SETS REPS

MONDAY

Legs	Barbell Squat	3	12-15
Back	Bent-Over Barbell Row	3	12-15
	Pull-Down to Front	3	12-15
Biceps	Alternate Dumbbell Curl	2	12-15
Triceps	Lying EZ-Bar French Press	2	12-15
Abs	Crunch	2	15-20
Cardio	20 minutes at 70%-75% MHR		

TUESDAY

Rest

WEDNESDAY

Chest	Dumbbell Bench Press	3	12-15
Delts	Seated Barbell Press	3	12-15
Triceps	Dumbbell Overhead Extension	3	12-15
Biceps	Standing EZ-Bar Curl	2	12-15
	Alternate Dumbbell Curl	2	12-15
Calves	Standing Dumbbell Calf Raise	2	12-15
Abs	Reverse Crunch	2	15-20
Cardio	20 minutes at 70%-75% MHR		

THURSDAY

Cardio	30 minutes at 65%-75% MHR		
---------------	---------------------------	--	--

FRIDAY

Legs	Leg Extension	3	12-15
	Lying Leg Curl	3	12-15
Chest	Pec-Deck Flye	3	12-15
Back	Bent-Over Barbell Row	3	12-15
	Back Extension	2	15-20
Delts	Dumbbell Lateral Raise	2	12-15
Calves	Seated Calf Raise	2	12-15

SATURDAY

Rest

SUNDAY

Rest

QUICK TIP:
You can switch whole days around in this routine, but keep the exercises within each workout in the same sequence. Each workout is intentionally ordered from larger to smaller muscle groups.

Other Training Essentials

Before You Train: Warming Up & Stretching

■ **Warming up gets your body ready for work**, moving blood into the muscles and joints and elevating your heart rate gradually. This is important to help you maximize workout performance and reduce risk of injury.

■ **A general warm-up** consists of 5–10 minutes of low-intensity cardiovascular activity, which should cause you to break a light sweat. Add arm circles and overhead presses to loosen up your upper body. Always warm up before you stretch.

■ **Stretch before you train**, after your warm-up — your muscles need to be warm and pliable. Stretching improves your flexibility, allowing a particular joint to move unimpeded through its complete range of motion. This is important for complete muscle development, improved performance and reducing risk of injury.

■ **Stretch every muscle group you'll be training**. Do 2–3 sets using static stretches, held to the point of slight discomfort for 15–30 seconds. Move slowly and don't bounce when you stretch, and never hold your breath (exhale as you stretch).

■ **Stretching the muscle group you're working between sets** improves range of motion and helps recovery, bringing in oxygen and nutrients and aiding in the clearance of metabolic byproducts such as lactic acid.

■ **Stretching after your training session** helps bring you back to your resting state and may also aid in preventing muscle soreness and stiffness.

Beginners' Training Guidelines & Tips

1) **Learn how to do each exercise properly** and use strict form. Practice the exercise movement before loading up with weights.

2) **Don't use momentum** or sloppy technique. Control the weight at all times on both the positive (raising the weight) and negative (lowering) movements. Never use bouncing motions, and exercise through a complete range of motion.

3) **Keep your mind on what you're**

doing, focusing on feeling your muscles work and good technique. Develop a feel for the working muscle and visualize it getting bigger and stronger. Mentally and physically contract your muscles, especially at the top of the movement.

4) **Breathing should come naturally on the exertion phase**. Typically, you want to exhale toward the end of the positive rep, through what's called the "sticking point," and inhale when you lower the weight.

5) **A basic lifting position for most standing exercises** includes placing your feet about shoulder-width apart and turned slightly outward, a slight bend in your knees, head level with eyes looking

Stretching improves your flexibility, allowing a particular joint to move unimpeded through its complete range of motion. This is important for complete muscle development, improved performance and reducing risk of injury.

forward, chest out and shoulders back, with a slight arch in your lower back.

6) For added safety, **tighten collars on barbells and have a spotter assist you on an exercise**. A spotter is a good idea when using a very heavy weight, lifting over your head or over your body, and when you're unfamiliar with a new movement.

7) As your muscles grow stronger and you're able to complete more reps with good form, **start adding weight in small increments to progressively overload your working muscles**. You don't need to train to failure to make gains, but you should come pretty close.

8) **Rest periods should be about 60–90 seconds**, long enough to catch your breath. Larger muscle groups like quads and back may take more time to recover.

9) **Don't work a muscle group if it's still sore** from a previous workout.

8 Stretches for Major Muscle Groups



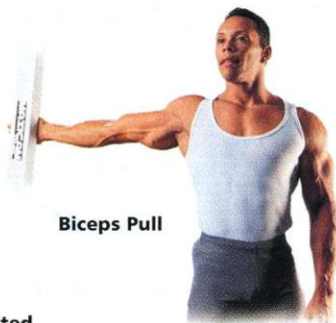
Standing Quad Stretch



Overhead Triceps Stretch



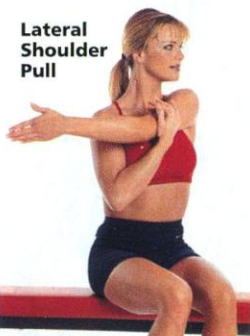
Doorway Pec Stretch



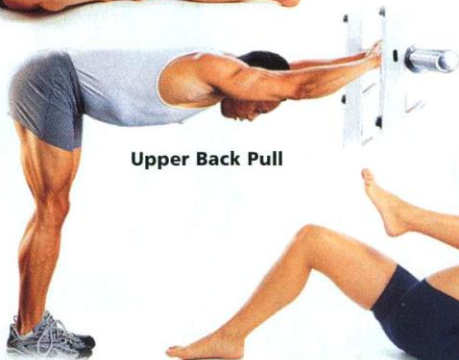
Biceps Pull



Seated Hamstring Stretch



Lateral Shoulder Pull



Upper Back Pull



Low-Back Roll

Exercise Technique

Abdominals

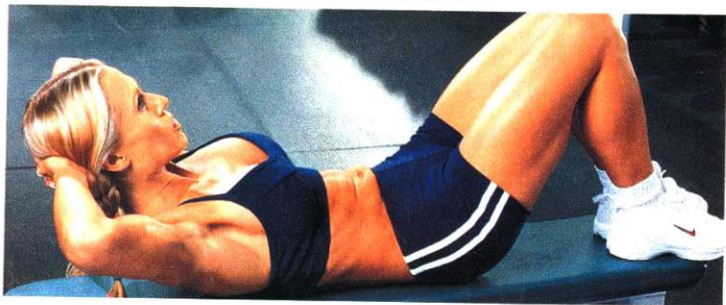
Take the time to learn each of these movements; for those of you who work out at home, comparable exercises are listed for all machine moves.

Crunch

Lie faceup, keep your legs bent and your feet on the bench. Support, but don't pull, your head with your hands while you contract your abs to lift your shoulder blades just a few inches off the bench.

Exhale, squeeze your abs and lower your shoulders. This exercise can also be done on the floor.

Mistake to Avoid: Locking your feet under a bench, which increases hip-flexor involvement.

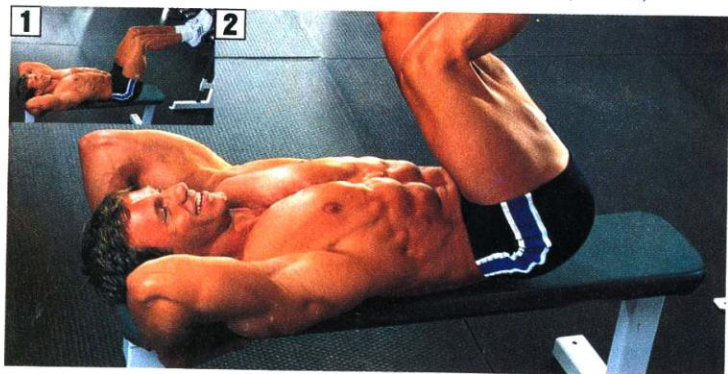


Reverse Crunch

Lie faceup on a flat bench with your hips and knees bent. Grasp the bench behind your head with both hands. Keeping the angles in your hips and knees fixed, contract your abs to pull your hips upward

until your lower back is a few inches off the bench. Hold for a moment, then lower and repeat.

Mistake to Avoid: Pulling with your arms to initiate the movement instead of flexing your abs to lift your body.



Pull-Down to Front

Adjust the seat so your thighs fit snugly under the kneepad, feet flat on the floor. Grasp the bar with a wide overhand grip. From an arms-fully-extended position, pull the bar toward the top of your chest, elbows coming down and back. Squeeze your shoulder blades together before slowly returning to the starting position.

Mistake to Avoid: Not keeping your lower back slightly arched throughout.

Alternate Exercise: One-arm dumbbell row (or pull-up, if you have a bar).



Back Extension

Lie facedown on a back-extension bench with your heels under the pad. With your body in a straight line, head neutral, lower your torso to about a 90-degree angle to your legs. Raise your torso back up to the starting position in a smooth motion.

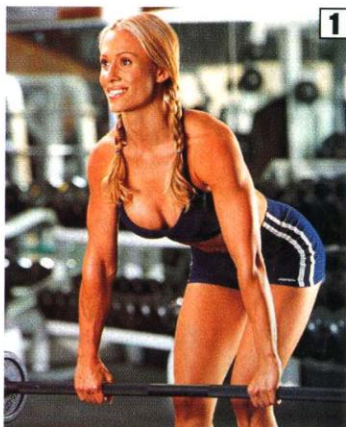
Mistake to Avoid: Rounding your lower back; to avoid this, keep your shoulder blades back during each rep.

Alternate Exercise: Lie on the floor and, with your hands behind your head, lift your torso up a few inches, holding for a two count before lowering and repeating.

Bent-Over Barbell Row

Keep a slight bend in your knees and your torso at a 30–45-degree angle to the floor, while maintaining the natural arch in your lower back by holding your head up. Grasp the bar with a shoulder-width, overhand grip and lift the bar into your lower midsection, moving your shoulder blades back on the ascent. Then reverse the movement, controlling the bar on the descent.

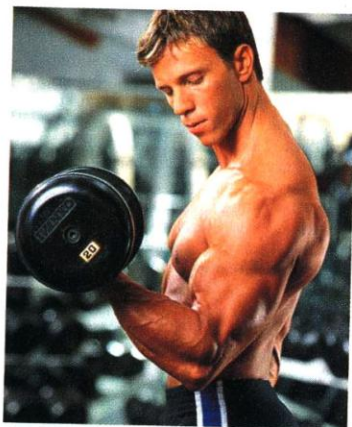
Mistake to Avoid: For the back muscles to work, the shoulders must move; if you're using too much weight, you won't be able to flex your shoulder blades back. If this is the case, drop the weight and do it right!



Alternate Dumbbell Curl

With your upper arms by your sides, palms facing in, flex your biceps on one arm to bring the dumbbell toward your shoulder, twisting your wrist as you lift so that at the top, your palm faces up. Reverse the movement, twisting your wrist back to the starting position at the bottom. Then complete a rep with the other arm. Completing the move for both arms constitutes one full repetition.

Mistake to Avoid: Bringing your elbow forward as the dumbbell reaches the top. Your upper arm should remain almost stationary; only the forearm should be in motion.



Standing EZ-Bar Curl

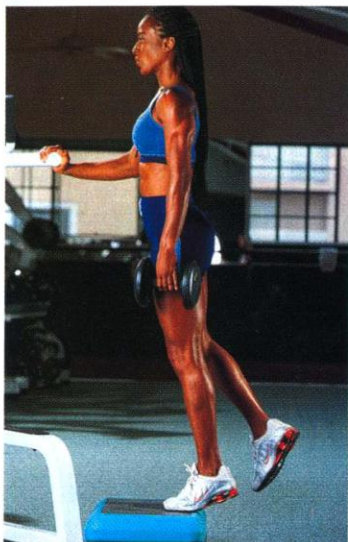
Grasp an EZ-bar with an underhand, shoulder-width grip, lock your upper arms by your sides and, without swinging from your lower back, curl the bar toward your shoulders. Squeeze your biceps before lowering the weight and repeat.

Mistake to Avoid: Letting your elbows flare from your sides for leverage.



1





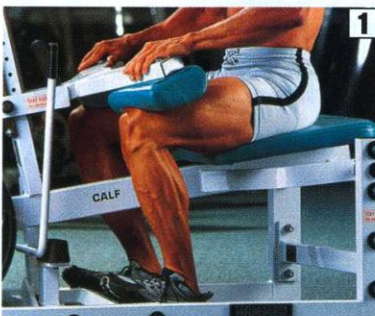
Standing Dumbbell Calf Raise

Stand holding a dumbbell at your side. With the ball of your foot on a raised surface such as a step and your leg straight, lower your heel to stretch your calf, then press up on the ball of your foot as high as you can. Complete all reps for one leg before switching legs.

Mistake to Avoid: Repping too quickly. Go slow and squeeze! It's not the amount of weight you lift for calves — growth comes from the burn.

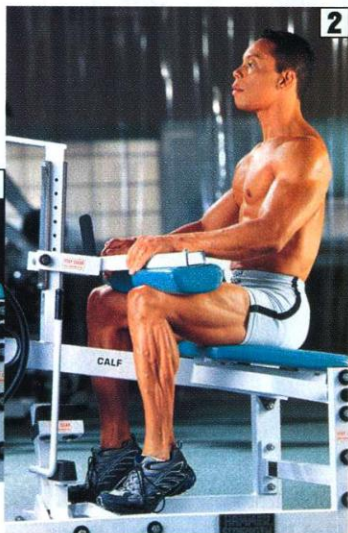
QUICK TIP:

At the gym, a standing calf machine is a good replacement for dumbbell calf raises



Seated Calf Raise

With your knees under the pads, place the balls of your feet on the edge of the foot platform. Release the safety lock and lower your heels until you feel a stretch in your calves. Push through the balls of your feet to raise your heels as high as you can. Squeeze your calves hard at the top.



Mistake to Avoid: Turning your ankles in or out; keep your toes and feet in their natural, relatively straight position.

Alternate Exercise: Place plates on your lap to provide resistance, or perform additional sets of standing dumbbell calf raises.

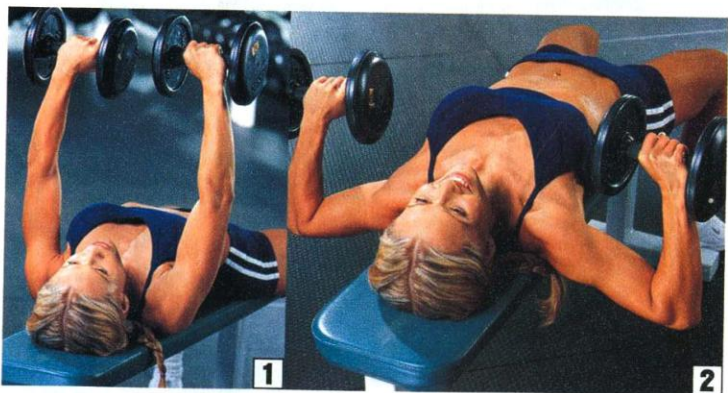
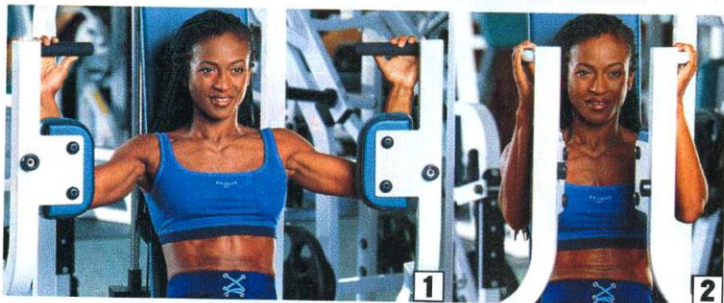
Pec-Deck Flye

Sit squarely on a machine with your back in full contact with the pad. Place your forearms on the handles, keeping your upper arms about parallel to the floor and your elbows bent at 90 degrees. Your forearms should remain in contact with the pads at all times. Flex your chest

while bringing the handles together in a steady motion. When the pads almost touch, hold for a second before reversing the movement to a chest-stretched position.

Mistake to Avoid: Pushing with your hands, instead of leading with your elbows.

Alternate Exercise: Flat-bench



Flat-Bench Dumbbell Press

Lie faceup on a flat bench, feet planted on the floor, with a dumbbell in each hand above your chest, arms extended. Bring the dumbbells down and out slightly to mid-chest level, pause, and press them back up in a slight arc toward

each other, straightening, but not locking, your elbows at the top.

Mistake to Avoid: Not keeping your elbows out to the sides to recruit the chest. Bringing the elbows closer in to the sides gets your triceps more involved in the movement than you want them to be.

Seated Barbell Press

Sit down at a military press station and plant your feet, thighs parallel to the floor. Reach up, lift the bar from the supports and lower it straight down and directly in front of your face, touching

your clavicles. Your elbows should point straight down. Pause briefly before reversing the motion, stopping just short of elbow lockout at the top.

Mistake to Avoid: Stopping the motion short of the bottom position.



Dumbbell Lateral Raise

Stand and hold a pair of dumbbells in front of your thighs, palms facing each other. With your elbows slightly bent and locked in this position, lift the weights up and out to your sides until your hands and elbows are about shoulder height.

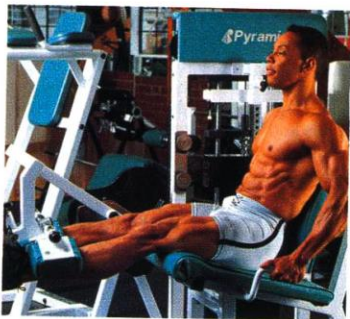
Mistake to Avoid: Leaning backward as you lift to generate momentum.

Leg Extension

Adjust the seat back and footpad so your knees are flush with the edge of the seat and your ankles are just below the footpad. Grasp the handles to keep your body stationary and press your shins against the footpad until your legs are almost fully extended. Squeeze your quads briefly, then slowly return to the starting position and repeat.

Mistake to Avoid: Snapping up into the top position, putting your knees at risk of hyperextension.

Alternate Exercise: Dumbbell lunge.

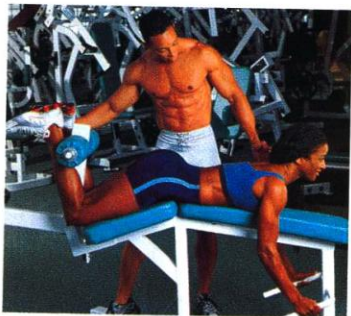


Lying Leg Curl

Position the footpad so it presses just above your Achilles tendons, and lie face-down on the machine. Grasp the handles and bend your knees to curl the weight toward your glutes. Squeeze your hamstrings at the top, then slowly lower the weight and repeat. A good mental trick to activate your hams is to imagine them flexing on the ascent; as a visual, think of your hamstrings like your biceps flexing on a curling exercise.

Mistake to Avoid: Not taking the movement through a full range of motion.

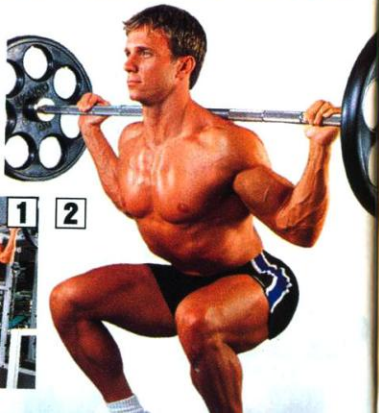
Alternate Exercise: Dumbbell lunge.



Barbell Squat

Step under the bar in a shoulder-width stance, and keep your elbows back to form a ridge along your upper back where the bar can sit. Take a deep breath and, keeping your head up and entire body tensed, especially your abs, bend at the knees and let your glutes track backward to lower yourself. At the point where your thighs are parallel to the floor, reverse direction, driving up forcefully through your heels to a standing position.

Mistakes to Avoid: Using plates under your heels, and rounding your lower back as you move through the range of motion.

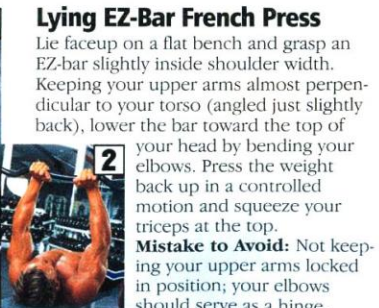
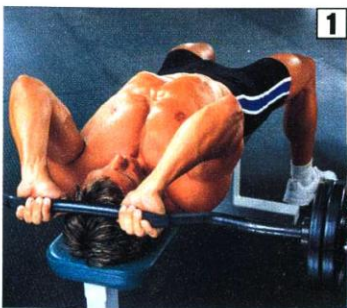
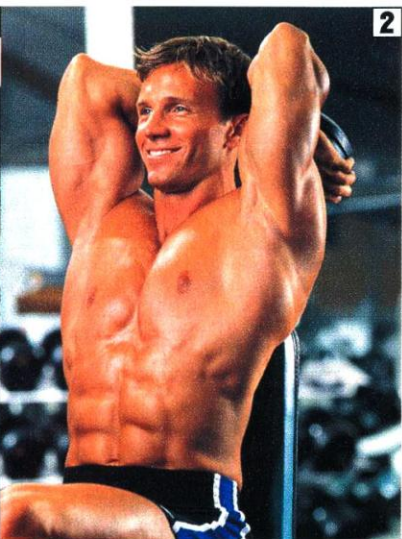
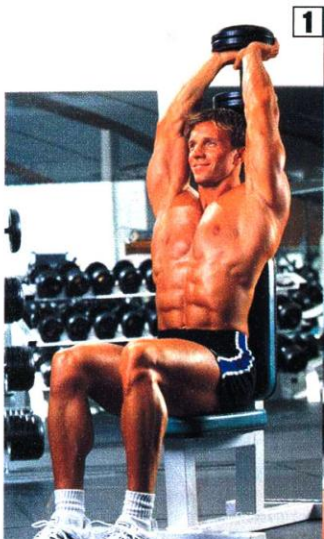


Dumbbell Overhead Extension

Sit on a flat bench or a low-back chair. Lift a dumbbell overhead, cupping the inside edge of the top of the weight with both hands with a tight grip. From an elbows-extended position, slowly lower the dumbbell down behind your head, stop-

ping just short of allowing the weight to touch your neck. Then reverse, squeezing your tri's when extending your elbows fully at the top.

Mistake to Avoid: Letting your elbows flare out to your sides too much; try to keep them facing forward.



Lying EZ-Bar French Press

Lie faceup on a flat bench and grasp an EZ-bar slightly inside shoulder width. Keeping your upper arms almost perpendicular to your torso (angled just slightly back), lower the bar toward the top of

your head by bending your elbows. Press the weight back up in a controlled motion and squeeze your triceps at the top.

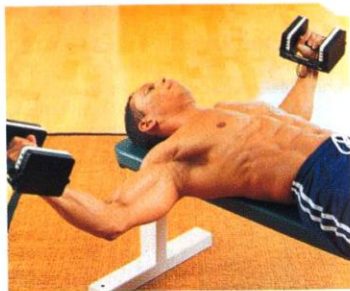
Mistake to Avoid: Not keeping your upper arms locked in position; your elbows should serve as a hinge.

Home Exercise Alternates

Flat-Bench Dumbbell Flye

Replaces Pec-Deck Flye

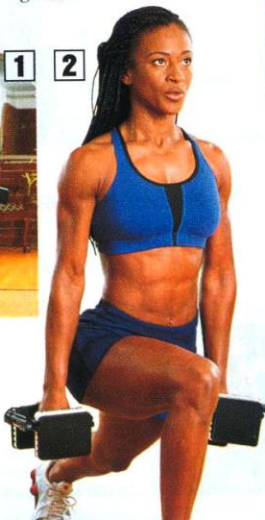
Lie faceup on a flat bench, holding a pair of dumbbells at arms' length over your chest. Your palms can either face each other or you can do the flye with palms-forward, which may take some stress off your shoulders. With your elbows slightly bent and pointing out, and locked in that position throughout, lower the dumbbells in an arc out to your sides until you feel a good stretch in your pecs. Reverse the motion, but don't let the dumbbells touch at the top before beginning the next rep.



One-Arm Dumbbell Row

Replaces Pull-Down to Front

With one knee and hand on the bench, grasp a dumbbell with the other hand. Keeping your back arched and parallel to the floor, squeeze your shoulder blade up as you bend your elbow, bringing the dumbbell to your waist or flank. Pause at the top, then lower to a stretched position, letting your shoulder roll forward a little. Complete all reps for one side before switching sides.



Dumbbell Lunge

To replace both the leg extension and lying leg curl, do 3-4 sets total of lunges. Holding a dumbbell in each hand at your sides, take a long stride forward with one leg. Bend your front knee while keeping your back knee straight and descend straight down. Stop when your front thigh is parallel to the floor; don't let your back knee touch down. From here, push up through your front leg and heel forcefully until you come back to a standing position. You can either repeat for reps with one leg, or alternate legs to complete the desired number of reps.

Beginner's Guide to Cardio

Benefits of Aerobic Exercise

Cardio (aerobic) exercise is a vital part of any training program. Cardio helps the body burn fat as fuel, improves cardio-respiratory health, reduces stress, helps reduce blood pressure and cholesterol levels, and increases bone density and energy. Activities to choose from include cycling, swimming, jogging, running, rowing, in-line skating, stair-stepping, walking or instructor-led aerobics classes.

Measuring Cardio Intensity

Target Heart Rate

Reap the greatest benefits from your efforts by working at the appropriate intensity level. Use this simple formula to estimate your heart-rate zones. Subtract your age from 220; this approximates your maximum heart rate (MHR). To find your target heart-rate range, multiply your MHR by 0.6 and 0.85. For example, if you're 30, your numbers look like this:

$$220 - 30 = 190$$
$$190 \times 0.6 = 114$$
$$190 \times 0.85 = 162$$

Your target heart-rate range is between 114–162 beats per minute. This means for lower-intensity workouts, your heart rate should be somewhere around 114, for moderately intense workouts around 140 and high-intensity workouts around 162.

When you take your pulse during training, gently put two fingers to your carotid artery on your neck or your radial artery on your wrist, count the beats for 15 seconds using a watch or clock with a second hand to keep track. Begin counting with "zero." When finished, multiply by 4 to determine your beats per minute. Take your pulse

within 10–15 seconds of stopping, and no later, for the most accurate reading.

Tips for Success

■ **Get the green light from your doctor** to start a cardio and weight training program if you're over 40 or have any chronic health conditions.

■ **Warm up by performing the same activity at a lower level of intensity** (for example, walking on a treadmill before jogging), and cool down by doing the same.

■ **For maximum fat-burning, you must raise your heart rate to the target**

QUICK TIP:

Follow a hard workout with an easier one to avoid burnout and injury and to maximize the effects of your training.

**Keep this rule in mind:
The longer the session, the lower the intensity; the shorter the session, the higher the intensity.**

zone. It may take 10 minutes to get it up there, but once you do, keep it in that range for the duration of your session. Working below 60% still offers benefits; you'll continue to burn calories, but not as many as you would at a higher intensity, and you won't increase cardio endurance.

■ **Don't overdo it.** Beginners should start off with low-intensity training and work to improve over time. You know you're overdoing it when you feel dizzy or faint, you're sweating profusely, or if you experience pain. If you experience any of these symptoms, slow down and stop. Take in fluids and walk to drop your heart rate safely. If any of the above symptoms persist, see your doctor.

■ **Set realistic short- and long-term goals** (time, distance, intensity, workout frequency, etc.). Keep a training log to monitor your progress. Change only one variable at a time, and heed the 10% rule: Don't increase any one variable by more than 10% per week.



Nutrition Guidelines

Eating right will produce better results more quickly. Here's an eight-step plan for your first bodybuilding diet. Follow the guidelines listed for each week, and maintain the previous weeks' recommendations as you progress. In week 4 you'll still be doing what you learned in weeks 1, 2 and 3, and so on. By week 8 you'll have developed an essential base of sports-nutrition habits.

Week 1: Assess Yourself

Starting on the first day of the week, keep a food journal for three full days. Include the times you eat, what you eat, how much you eat and how hungry you are when you eat it. If you have half a bag of Doritos after dinner, fine, just write it down.

Take note of how your schedule affects your diet. What times do you have available to eat during the day? What times are too hectic to even think about food? When do you get hungry?

Day 4: Now, harness all of that information and write down three goals for yourself. Is there a bad habit you'd like to

break? Do you go eight hours without eating? Is there a single fresh vegetable in that three-day food diary?

You are *not* going to completely make over your diet overnight, nor would you want to. Your chance of success is infinitely better if you set some reasonable, realistic, attainable goals rather than vowing to subsist entirely on egg whites, grilled chicken breast and broccoli.

Day 5: Write a list of your pros and cons about eating a healthier diet. Be completely honest! Are finances a barrier? Time? Do you associate dieting with a loss of social life? For the next couple of days, think about how you might overcome those "cons" when they inevitably arise. Write at least one countering technique you can use for each.

Week 2: Eat More Frequently

Divide what you're currently eating into pieces and spread them throughout the day. Instead of thinking "breakfast, lunch and dinner," start thinking, meal 1, meal 2, meal 3, meal 4 and, if you're really diligent, meal 5.

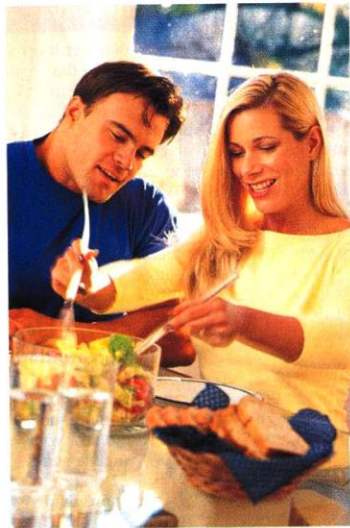
Going 5–7 hours between meals makes you less likely to lose fat, more likely to store fat and less likely to gain muscle. And those are all contrary to what you want, right?

Depending on your goals, these meals should range between about 400–700 calories, but don't get too hung up on calories yet. For now, just concentrate on getting in the habit of eating every 3–4 hours.

Things to Bring

It's easier to stick to an eating schedule if you're prepared. Stock up on a few of these items for time-crunched situations that don't allow you to prepare a meal.

■ pop-top or single-serve pouches of water-packed tuna ■ turkey or beef jerky (watch the salt) ■ string cheese or individual 0.75-ounce packaged cheese ■ instant packets of oatmeal (just add water or skim milk) ■ protein bars and shake packets ■ fresh fruit/baby carrots, etc. ■ light popcorn ■ yogurt or mini-containers of cottage cheese ■ hard-boiled eggs (boil a dozen, then refrigerate)



Week 3: Up Your Protein Intake

Without enough protein, you can kiss your muscle growth goodbye. If you're working out intensely most days of the week, you need 0.8 gram of protein per pound of bodyweight daily. If you weigh 150 pounds, that equals 120 grams daily. Some people round up to 1 gram per pound of weight, which is fine, but research shows that 0.8 gram is more than adequate to cover the protein needs of training.



The following are some good protein sources.

Food	Grams of Protein
½ cup tuna	26
3½ oz. chicken breast	30
4 oz. lean ground beef	28
4 oz. salmon	25
1 whole egg/1 egg white	6.3/3.5
½ cup low-fat cottage cheese	16
1 28-gram scoop protein powder	22

(values may vary depending on brand)

To get enough protein in a given day, a 150-pound person's diet might include:

Breakfast—2 egg/2 egg white scramble	= 20 g
Mid-morning meal—protein shake	= 22 g
Lunch—tuna (on sandwich)	= 26 g
Mid-afternoon meal—cottage cheese	= 16 g
Dinner—chicken burrito w/ beans	= 35 g

That's 119 grams of protein, not even counting what you'll get from the oatmeal you have with the eggs, the bread from the sandwich and the cheese or tortilla on the burrito. Start glancing at labels and keep a rough count of your protein grams throughout the day. (It isn't necessary to equally divide the protein among each meal.)

Week 4: Change Your Carbs

The easiest guideline we can give you is

to choose carbs that are closest to their original form. Here are some examples.

Original Source	Good Source	Okay Source	Processed
Wheat	Whole-wheat bread/pita/bagel/cracker/pasta	White bread, regular pasta, saltine cracker, water bagel	Croutons, boxed Mac N' Cheese, cheese-flavored cracker, bagel chips
Potato	Baked potato, low-fat potato salad, low-fat mashed potatoes with skin	Air-baked french fries	Boxed instant mashed potatoes, potato chips
Rice	Brown rice	White rice	Rice Krispies
Oats	Old-fashioned oatmeal	Instant packet oatmeal	Oatmeal cookie
Apple	Apple No-sugar natural applesauce Dried apples	Apple juice	Apple butter

Start eating more toward the left and less toward the right. Chances are you'll get: ■ less added sugar and fewer preservatives ■ fewer calories and less saturated fat ■ less sodium ■ more fiber and water.

Nutrition Guidelines

Week 5: Change Your Portions

If fat loss is one of your goals, you need to diet to some extent so your total calorie *intake* is less than your total calorie *expenditure*. Portion size is the simplest method of weight control and much easier than counting calories. If you want to lose weight, stick with portions that fit in your palm, visualized as follows:

- one serving meat or fish = deck of cards
- one serving rice or pasta = tight fist
- a baked potato = computer mouse
- one serving of cheese = four dice
- one serving of butter, mayonnaise or other fats = thumb tip.

If you do want to count calories, base your intake on the following:

- For mass gain: Your weight x 18
- For maintenance: Your weight x 15
- For fat loss: Your weight x 12.

For example, a 170-pound person who wants to lose weight would eat about 2,000 calories per day. (These numbers are just general guidelines.) Another method you can use is to keep a three-day diary of your usual food intake (on which you're maintaining your weight) and calculate an average of the three days' total calories. For weight loss, aim to reduce your calorie intake by about 300–500 per day, or take half that amount from your diet and burn the balance through cardio.

Week 6: Limit Saturated Fat

While you don't need to cut fat out completely, some dietary fats are far more desirable than others. Here's a cheat sheet to get you started.

Good-for-you fat sources	Use only in moderation
Nuts	Butter
Olive oil	Sour cream
Avocado	Partially hydrogenated oil
Canola oil	Coconut oil
Peanut butter	Whole milk and cheese

Each dietary fat gram has 9 calories, while a protein or carbohydrate gram has 4 calories. The reason many people watch their fat intake on weight-reducing diets is that it packs so many calories in a small amount of food.

Week 7: Drink Like a Fish

More than half of your body is made up of good old H₂O, which lubricates your cells, regulates body temperature and affects your exercise performance, among many other functions. The easiest way to monitor your fluid intake is urine color and volume. The lighter and the more of it, the better. If it's dark and concentrated, you need to drink more. For optimal performance and recovery, *drink 2 cups of water before, during and after exercise.*

Week 8: Get Clean

You'll often hear fitness athletes and bodybuilders use the phrase "eating clean." This means eating foods that are packed with muscle-building nutrients without extras like refined sugar, sodium and trans fats. Here's an easy way to clean up your diet without monumental effort or expense: Five days a week, cook one meal from scratch.

At that meal, include at least one serving of vegetables, a lean protein and one serving of a starchy carb (you'll find examples on the next page). If you can, make extra so you can eat the leftovers the next day.

Eating-clean staple foods include:

- Egg whites/eggs
- Lean ground beef/turkey/chicken breast
- Salmon/tuna or other fish
- Potatoes/yams
- Whole-grain bread or pasta, oatmeal
- Low-fat or fat-free milk, cheese, yogurt, cottage cheese
- Fresh and frozen vegetables and fruit
- High-fiber boxed cereals (try Wheaties, Cheerios, Kashi, Shredded Wheat)
- To flavor: Mrs. Dash, Molly McButter, cinnamon, nutmeg

QUICK TIP:

On packaged foods, check labels for calories and serving size — some use unusually small serving sizes so they can show a low calorie total.

Sample Meals

BREAKFAST

Option 1

Omelet made from 2 eggs,
2 whites, ½ cup chopped
broccoli, 1 oz. low-fat
cheddar cheese
1 sliced apple
1 English muffin, toasted,
spread with 1 Tbsp. light
margarine

535 calories, 35 g protein,
52 g carbs, 20 g fat

Option 2

1 cup dry oatmeal cooked with water and mixed with 1 scoop chocolate whey protein powder (mix in after oatmeal is cooked), 1 packet sugar substitute if desired
8 oz. orange juice

520 calories, 31 g protein,
83 g carbs, 7.5 g fat

Option 3

2 Nature Valley peanut butter granola bars
1 ready-to-drink Pure Pro Shake
1 banana

455 calories, 41 g protein,
60 g carbs, 7 g fat

LUNCH/DINNER

Option 1

Tuna sandwich made with
½ cup albacore tuna in
water (drained) mixed with
1 Tbsp. light mayonnaise,
1 Tbsp. relish, ¼ cup
chopped celery, on 2 slices
whole-wheat bread
1 oz. mini pretzel twists
1 snack box raisins

555 calories, 39 g protein,
83 g carbs, 10 g fat

Option 2

3½ oz. (raw weight) skinless chicken breast grilled and topped with 2 Tbsp. barbeque sauce
1 medium baked potato topped with 2 Tbsp. light sour cream and Molly McButter
2 cups green salad with 2 Tbsp. reduced-fat Italian dressing

598 calories, 36 g protein,
72 g carbs, 17 g fat

Option 3

2 fresh Baja-style steak
tacos (2 mini soft corn tor-
tillas, steak, cilantro, onion)
5 oz. black beans
1 oz. (about 12) chips
(taken from
www.bajafresh.com)

580 calories, 32 g protein,
86 g carbs, 13 g fat

SNACKS

Option 1

1 ready-to-drink Pure Pro Shake
2 Fig Newtons

349 calories, 37 g protein,
39 g carbs, 5 g fat

Option 2

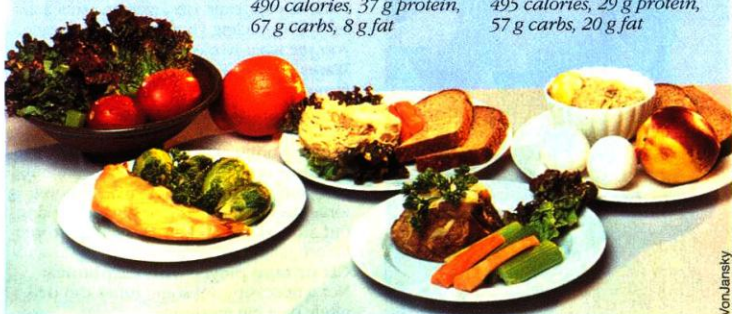
1 Lean Cuisine Everyday Favorites Macaroni & Cheese mixed with 1 can Starkist Pop-Top Albacore tuna packed in water (add tuna after cooking)

490 calories, 37 g protein,
67 g carbs, 8 g fat

Option 3

2 hard-boiled eggs
1 Orowheat whole-wheat
bagel spread with 1 Tbsp.
creamy peanut butter

495 calories, 29 g protein,
57 g carbs, 20 g fat



Basic Training Science: How Do Your Muscles Grow?

The Stimulus for Muscle Growth: Progressive Overload

The most important principle to understand as a beginning bodybuilder is *progressive overload*. This concept should form the foundation of all your training efforts. Muscle is one of the most adaptable tissues of the body, and will grow stronger and larger in response to regular overloading. That's why training is beneficial only when the overload is greater than what the body has encountered in previous work sessions, therefore increasing the strength and size of the body tissues in response. Muscles grow, bones get stronger, and the nervous system becomes more efficient at recruiting muscle activity.

Muscle Fiber Type & Hypertrophy

Your skeletal muscle is made up of two basic fiber types:

- **Fast-twitch fibers (FT)** generate the most tension and offer the greatest potential for growth. However, they also fatigue quickly.
- **Slow-twitch fibers (ST)** produce less tension but have a high endurance capacity. They have the least potential for growth.
- **Some muscle fibers** exhibit the characteristics of both ST and FT fibers. They produce more tension than ST but less than FT, are slower than FT but faster than ST, and have a higher endurance capacity than FT but not as high as ST. These fibers have a moderate potential for growth.
- **While those individuals with a higher percentage of FT fibers** will have an advantage when it comes to maximizing muscle hypertrophy (increase in muscle size), as a bodybuilder your goal is to make all fiber types bigger, so you should use a variety of training techniques.
- **Strength gains that beginners typically experience** during the first 6–8 weeks of training aren't usually accompa-

nied by muscle fiber growth. Your nervous system is adapting to the new stimulus first, allowing you to maximize your strength with the muscle you have already. After about six weeks, hypertrophy becomes more evident and contributes to further strength gains.

Create an Anabolic Environment

■ Day to day, your bodyweight doesn't change a lot, which leads many people to falsely believe their body is in a state of balance. However, that's not the case: **The human body is constantly either breaking down or building up muscle tissue.** The former, called catabolism, is when the body breaks down proteins at a faster rate than it synthesizes new proteins. A catabolic state is induced by heavy training and can also be brought on by dietary deficiency.

An anabolic state is the opposite — your body has the nutrients it needs on hand and is in a resting state — thus, more protein is being synthesized into muscle tissue than is being broken down for energy.

■ **A common mistake** by many beginners is to think that they're growing in the gym — and this leads to overtraining. While in the gym, you're in a catabolic state, breaking down molecules for energy to fuel your training.

■ **In the recovery time** (hours and days) following training, your goal is to stay anabolic — provide an environment for long-term growth by stimulating a net increase in muscle protein synthesis. Remember: If you're in the gym more often than you're recovering, you won't grow!

QUICK FACT:
Your nervous system adapts to progressive overload by improving its ability to recruit additional muscle fibers and generate more force.