warming up to a great workout!

training effect categories:
1. athletic performance
2. strength
3. hypertrophy or muscle growth
4. muscular endurance

warming up for athletic performance
the following can be applied to any sport, pre-workout to serve as a general systemic warm up. some may seem a bit off kilter, but believe me they are tried and true methods of some of the most successful strength coaches on the planet. these are a few of my favorites:

1. wheelbarrow push: just like it sounds, load up a wheelbarrow with sand, dirt, chains, x-girlfriends, whatever you like. pick a weight and a distance, and then add a little bit more each workout, which will do wonders for your core strength, grip strength, and increasing work capacity. this can be done in a parking lot, on a track, a construction site (which would be a great place to score a wheelbarrow, just make sure you ask to borrow it).
2. sled dragging: used by many pro football teams, this contraption is basically a flat piece of steel with a pole sticking out of the middle, attached to a harness and waist strap. load up the weight, and drag it a given distance.
3. iron cross squats: this one can be done in any weight room. grab a pair of dumbbells, stand up and hold them out at your sides at arms length. squat down as far as flexibility allows, and as you descend bring you arms in front of your body, still outstretched. at your bottom position hopefully your butt is almost on the ground, and the dumbbells are extended directly in front of you at eye level. now reverse the motion as you stand up.
4. jump lunge w/ a twist: grasp a dumbbell (or plyoball) with two hands, and get into the bottom position of a lunge. hold the object to the outside of your leading leg, with a good twist at the torso (in other words your belly button should be pointing the same direction as your fists). now jump as high as you can, switch your lead leg in the air, and twist your torso and fists to finish at the outside of your new leading leg.
5. swiss ball inner unit drills: a few basic exercises to help activate the inner unit (core) muscles of your torso and hip region that can be found on a diagram anywhere you find a swiss ball: forward ball roll, transverse ball roll, kneeling balance.

warming up for strength (1-6 reps)
first off maximal strength is a product of the size and number of type iib muscle fibers, and the ability of your nervous system to activate them. these are the most sensitive of all of your fibers and are referred to as "high threshold".

think of them as that significant other you used to have that would cry and slam doors every time you said something wrong. treat these fibers wrong, even for a second and they'll surely slam the door in your face causing you to lose strength.

mistake 1: high rep warm-ups
high reps (10 and above) will cause your body to release lactic acid into the blood stream which significantly impairs the nervous system's ability to activate high threshold (think strength) motor units. wham! the door just slammed, and an inspirational picture of your goal physique fell of the wall. keep the reps in your warm up sets at six or below (see examples below).

mistake 2: low set warm-ups
knock out 10 reps with the bar, 10 reps with plates on each side, and hit it, right? wrong! let your nervous system know what's coming for god's sake! don't send a soldier into battle with pepper spray! the closer you are working to your one rep max during your real sets, the more warm up sets you need. i recommend about 3-5 warm up sets, each with progressively heavier weight, but never excessively

fatiguing yourself for your real sets.

mistake 3: stretching
before you turn the page muttering about heresy, hear me out. healthy muscles remain at optimum contraction length in a resting position. when you stretch them, you cause them to go into a sub optimal contraction length, hence weakening the fibers (temporarily).

don’t get me wrong, stretching is great, just not before you are going to call upon a muscle to perform at peak output levels. so save your stretching for after your workout, or better yet—stretch the antagonist (opposite) to the muscle you are going to use. benching heavy—stretch the lats! squatting heavy-stretch the hip flexors! you will find that this can enhance the effects of the stretch shortening cycle (that’s a very good thing) and make your bench press/squat stronger!

exceptions do exist, however; if the muscle you are about to train is chronically tight, by all means stretch it first, because it is probably at a sub optimal contraction length at the other end of the spectrum. i am not going to discuss specifics, but for those of you familiar with pnf stretching, studies have shown it to cause short-term gains in strength, so feel free to give it a try pre-workout.

mistake 4: general warm-ups
the nervous system picks up patterns, and running on the treadmill, or pedal pushing for 5-10min to "get the blood flowing" or whatever rationale you use does nothing to prepare the c.n.s. for a highly specific task like benching, squatting, rows or any other exercise for that matter (other than running or biking).

so do your body a favor and don’t waste your glycogen (stored energy) on something that isn’t going to help your body complete the task at hand.

if you’re going to squat, warm-up by squatting, stay away from the treadmill. in fact, walk a wide path around it as i’ve seen those things leach glycogen from people’s livers osmotically from three feet away. you wouldn’t warm up your car for a trip to the grocery store by hopping on the highway would you?

example warm up routines:

keep a constant moderate tempo on all reps, about 3 seconds down, 3 seconds up (3030)
only perform warm up sets for the 1st exercise per cold muscle group
rest only as long as it takes to change the weights between warm up sets

6 > 4 > 2:

planned work sets: 4 sets of 6 reps @ 225lbs
warm-up set 1: 50% 6rm = 110lbs x 6 reps
warm-up set 2: 70% 6rm = 160lbs x 4 reps
warm-up set 3: 90% 6rm = 205lbs x 2 reps

4 > 3 > 2 > 1:

planned work sets: 5 sets of 3 reps @ 275lbs
warm-up set 1: 50% 3rm = 135lbs x 4 reps
warm-up set 2: 75% 3rm = 205lbs x 3 reps
warm-up set 3: 90% 3rm = 245lbs x 2 reps
warm-up set 4: 95% 3rm = 260lbs x 1 rep

warming up for hypertrophy (6-12 reps)
if your goal is muscle size, your warm up will be similar to a strength warm up. depending on training age (years working out) your work sets (after the warm up) should involve a rep range of about 6-12 reps. you still want to avoid excessive lactic acid release because of some partial type iib contribution, so again

keep warm-up reps at six or below.

sets should be less since the body will be performing at a lower intensity (% of 1 rep max, not how loud you scream) therefore needing less preparation. tempo should be about the same as for strength.

again, stretching would be counter-productive unless injury/chronic tightness exists, in which case pnf would be the most effective pre-workout modality, followed by the warm-up. a general warm-up is still not necessary, like strength training go right to the 1st exercise of your workout and commence the specific warm-up.

example warm up routine:

planned work sets: 3 sets of 8-10 reps @ 185lbs
warm-up set 1: 50% 10rm = 95lbs x 6 reps
warm-up set 2: 80% 10rm = 150lbs x 4 reps
advanced technique trick

take a look in the on-deck circle at a baseball game—the batter has weighted donuts on his bat during his warm up swings. when he steps into the box his bat feels light, therefore increasing swing speed and power output.

this is called a neural pre-load and can be applied to your weight training routine for immediate gains in strength in tern leading to new muscle growth. neural pre-loading acts like a light switch for your type iib fibers, turning them on so they can assist your other fibers during your hypertrophy sets.

example neural pre-load warm up:

planned work sets: 3 sets of 8-10 reps @ 185lbs
warm-up set 1: 60% 10rm = 110lbs x 6 reps
warm-up set 2: 90% 10rm = 165lbs x 3 reps
warm-up set 3: 130% 10rm = 240lbs x 1 rep
warming up for endurance (12+ reps)

individual response will determine the best warm up for endurance weight training—at least more so than the other categories. more often than not, i recommend only one set for a specific endurance warm up. if you are performing an exercise unfamiliar to you, more warm up sets can be beneficial, and the less comfortable you are at performing the movement, the more reps you should use in the warm up set(s).

while physiologically it is arguable whether a warm up set is even necessary at all for endurance, it does serve as a nice transition from your daily routine to help you get focused on the workout, while also providing an opportunity to assess any possible injuries and get an idea for how strong you feel. higher reps are fine, no need to worry about excessive lactic acid since that will be unavoidable (and possibly beneficial) in an endurance workout.

general warm ups are optional, if 5 minutes on a treadmill helps you to have a better work out, by all means do it. just don’t feel like it’s necessary if you see no benefit. stretching is optional as well; your muscles are contracting with a relatively low force output, so no harm will be done. again, only stretch first if you feel it contributes to enhanced performance—try one workout stretching first, and the next stretching after and assess performance differences.

example warm up routine:

1. general: 5 minutes on treadmill (optional), 5 minutes stretching (optional)
2. specific: planned work sets—2 sets of 15 reps @ 100 lbs
3. warm up set: 60% of 15rm = 60lbs x 10 reps

whether this article has reinforced your old warm-up habits or offered you some new warm-up strategies, i suggest you make full use of them. applying these techniques to your workouts will offer the benefits of better workouts, faster progress, and fewer injuries.