

Wellness on

New ACE research reveals calorie burn and body benefits of walking with a baby stroller

By Mark Anders

was out for my morning bicycle ride in our neighborhood when I first saw them. In formation like some motorcycle gang, a dozen moms pushing their babies in strollers crested the hill two-by-two, chatting and laughing as they rolled past. After that day, I started seeing the same group of mothers walking together several mornings a week. Their faces were always flush and rosy and it was clear they were getting a good workout—and having way too much fun along the way.

Unfortunately, fit new moms like these are not the norm. According to a study in the *Journal of Science and Medicine in Sport*, mothers with young children are decidedly less likely to get even the minimum amount of exercise they need to stay healthy than women of similar age without kids. Add to that the challenge of losing postpartum weight—the average woman puts on about 30 pounds during pregnancy—and this can contribute to the development of a number of health issues.

“It’s a problem and it can lead to health risks down the road,” says Lisa Bush, M.S., co-leader of the American Council on Exercise’s latest sponsored study. In particular, she points to problems like long-term obesity, heart disease and diabetes as the most dangerous effects of postpartum weight retention. “Women gain weight after pregnancy and a lot of times it’s hard to lose because of this new child in their life. And now they’re busy running around and spending more time taking care of that child versus taking care of themselves.”

So ACE enlisted the research experts at the University of Wisconsin, La Crosse Exercise and Health Program to quantify the fitness benefits of walking with a baby stroller, in the hopes of motivating new mothers to take the first step toward regaining their health and fitness.

The Study

A crew of exercise scientists at the University of Wisconsin, La Crosse, led by John Porcari, Ph.D., and Bush, recruited 15 female volunteers, ages 19 to 41 years. Prior to beginning the study, the subjects (all of whom were physically active) completed a maximal exercise test on a treadmill while oxygen consumption

and heart rate were constantly monitored followed by a survey of their ratings of perceived exertion (RPE). Once researchers established those fitness baselines, each of the subjects performed a pair of exercise sessions while pushing a baby stroller on a treadmill. To make sure subjects were comfortable doing so, they were given the opportunity to practice prior to the testing phase.

For the first session they walked at 3 mph. The stroller was loaded with 35 pounds of additional weight to match the load of a one-year-old child plus a diaper bag. To simulate walking up hilly terrain, researchers varied the incline from flat to a 2.5 percent, 5 percent and 7.5 percent grade every four minutes during the 20-minute session. The second session included the same variance in grade, but at an increased walking speed of 3.5 mph. During each session, oxygen consumption ($\dot{V}O_2$), heart rate and RPE values were measured.

The Results

Once testing was complete, researchers started crunching the numbers. As predicted, walking while pushing a stroller burned more calories than simply walking alone. And, naturally, as the incline increased so did the calorie burn. No big surprises there. But of particular interest was just how much of a workout walking with a stroller really is.

Researchers found that exercise intensity and calorie burn were approximately 18 percent and 20 percent higher when walking with a stroller at 3 mph and 3.5 mph (respectively) than when walking without a stroller. In fact, on average, test subjects burned 6.2 calories per minute while pushing a stroller at 3 mph (Table 1), and then



Wheels

7.4 calories per minute while pushing a stroller at 3.5 mph (Table 2, see page 16). That works out to 372 to 444 calories per hour, which is on par with mowing the lawn or riding a bike at 10 mph. As for walking uphill, subjects' heart rates increased by an average of 12 beats per minute (a 6 percent boost) with every 2.5 percent increase in grade.

These results were even higher than expected. "The Compendium of Physical Activity actually lists the MET value [used to gauge workout intensity] of pushing a stroller at 2.5 METs," notes Bush. "But our research found it to be between basically 4 and 5 METs, which is quite a bit more."

Industry guidelines recommend that people exercise at a minimum intensity of 55 percent of maximal heart rate or 40 percent of $\dot{V}O_2$ max to maintain and improve cardiorespiratory fitness. With that in mind, pushing a stroller on level ground at 3.5 mph meets those guidelines, and walking uphill boosts the exercise benefits even more.

The Bottom Line

A new mom should not underestimate the value of taking her child out for a stroll or the necessity of taking care of her own health and fitness.

"Stroller walking is a great activity that will allow mothers to get in shape while bonding with their child and perhaps meeting other women who are dealing with the same challenges in terms of caring for a newborn and juggling other

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Table 1
Physiological Responses to Walking with at Stroller at 3.0 mph

Grade	HR (bpm)	$\dot{V}O_2$ (ml/kg/min)	RPE	Kcals/min
0% - no stroller	101±17.3	12.2±1.98	8.0±2.36	3.9±0.82
0% - stroller	111±21.8*	14.4±3.04*	9.7±1.18*	4.6±1.16*
2.5% - stroller	123±24.1*	17.3±3.29*	10.1±1.04	5.5±1.17*
5% - stroller	136±22.3*	20.9±3.33*	11.3±1.53*	6.7±1.26*
7.5% - stroller	149±21.1*	25.3±2.85*	12.6±1.79*	8.1±0.97*

*Significantly higher than the previous condition ($p < .05$)

Values represent mean ± standard deviation

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Choosing the Right Jogging Stroller

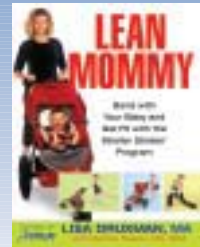
*Baby Boot Camp founder
Kristen Horler tells you how*

- **Say no to four-wheelers.** Whether you're jogging or even just walking briskly, the small wheels on traditional all-in-one strollers can create too much friction and create a dangerous situation for you and your baby, warns Horler. Instead, pick a stroller with three fixed wheels.
- **Inflatable and big is best.** When it comes to wheels, go with inflatable rubber ones of 16-inch diameter or larger. Choose a stroller with 20-inch wheels if you'll be doing serious running.
- **Get adjustable.** Strollers with adjustable handlebars are especially handy if you'll be sharing it with your (taller or shorter) partner. Besides ensuring the correct stroller posture for all, says Horler, adjustable handlebars can also increase your performance and comfort by dialing in a position to best fit your workout, whether you're climbing hills, jogging on flat ground or power walking.
- **Brake down.** Strollers with hand brakes are handy for slowing down on hills and such, but can disengage or slip when used as a parking brake, Horler warns, so choose models with a rear-wheel foot brake. Also make sure the stroller comes with a run-away leash.
- **Go for a test drive.** Before you buy, try as many different strollers as you can. Borrow one from a friend and don't be afraid to jog around the store with a stroller.
- **What you'll spend.** Expect to pay \$300 to \$350 for a new lightweight aluminum jogging stroller of good quality. Also check out the local newspaper or Web sites like Craigslist.org for good deals on lightly used strollers that might be gathering dust in someone's garage.
- **Extras that count.** Look for thoughtful features like key clips, water-bottle holders and an under-seat storage bin.
- **Remember your co-pilot.** Insist on a padded five-point safety harness for your child, and a reclining seat, which is a necessity for babies six months or younger who can't hold up their heads on their own, says Horler. It also helps make naptime workouts much easier.

THE WORKOUT

To give you the tools to apply this research to your daily life, we asked Lisa Druxman, M.A., founder of Stroller Strides to put together a stroller-based workout. All exercises are excerpted from *LEAN MOMMY: Bond with Your Baby and Get Fit with the Stroller Strides Program* by Druxman with Martica Heaner, M.A., M.Ed. (\$17.99; strollerstrides.com). Do these six moves in order two to three times a week for full-body fitness.

Note: Be sure to set the brake prior to performing these exercises.



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1. STROLLER SQUAT

Body Bonus: Helps get your bottom back to its pre-baby state by firming up your glutes.

Start: Stand behind your stroller so that your arms are shoulder-width apart, with your hands resting on the handlebars, legs hip-width apart, feet and knees facing forward. Stand tall and engage your abs.

Finish: Bear body weight in your heels as you inhale and lower body. Push your hips back behind you so upper body leans forward. Stop when knees bend to 90-degrees and keep calves perpendicular to the ground. Pause, then exhale and contract glutes to straighten legs and return to standing. Repeat.

Technique Tip: Decrease pressure on knees by keeping them directly above the ankles, instead of forward past toes. Rather than dropping straight down, imagine someone pulling your hips back to the horizon. The stroller should enable you to get a little bit lower than without a stroller. I have one client who always says, "If you don't squeeze it, no one else will want to." So squeeze those glutes!

Mommy Move: If baby is fussy, release brake, so baby rocks when you move. When you squat, pull the stroller back. When you come up, push it forward. Or, stand in front and play peekaboo or "this little piggy" with baby's feet as you squat without the stroller.



2. STROLLER LUNGE

Body Bonus: Firms up your butt and thighs.

Start: Stand about two feet away from stroller. Extend arms in front, hands resting on handlebar. Spread legs in a split stance as far apart as you can comfortably, right leg in front of the left. Distribute most of your body weight between front heel and back toe (with back heel raised.) Stand tall and tighten your torso.

Finish: Inhale, and lower hips by bending both knees. Stop when front thigh is parallel to the ground. Pause, exhale and squeeze glutes and thighs to return to straight-leg, starting position. Repeat, then switch legs. Make sure overall lunging motion glides up and down, rather than forward and back, to avoid stressing front knee. Keep upper body upright, shoulders down and back, chest lifted.

Technique Tip: If you feel strain in back knee at the lowest part of lunge, try not to bend quite as much. Instead, step back foot a few inches farther back and lower with a straighter back leg. For a static lunge, keep brake on the stroller. If you want baby to keep moving, release brake and gently push and pull her as you lower and raise your body.

Advanced Option: Take a walking step forward and push the stroller forward with each lunge.





3. STROLLER PLIÉ SQUAT

Body Bonus: Tightens your inner thighs and glutes.

Start: Stand behind stroller and face handlebars. Open your legs in a straddle, feet set much wider than your shoulders, toes turned out, pointing to corners. Rest hands lightly on handlebars.

Finish: Keeping back straight, bend knees and lower hips until legs and hips are bent around 90 degrees. Then exhale as you push your heels into ground and squeeze glutes and inner thighs to return to standing. Repeat.

Technique Tip: Avoid tucking pelvis under; maintain the natural curve in your lower back while tightening your abs. If your knees feel strained, spread feet wider and/or shift body weight slightly out in back as you lower.

Advanced Option: Pause at the bottom of the plié and lift your left heel. Pulse for 8 counts and then switch to right. Continue in 8,4,2 and then single pulses. Try holding the bottom of the plié while lifting both heels up.

Mommy Move: To liven up the exercise, release brake. Hold the lowest point of plié, engage your core to stabilize and push stroller back and forth to rock baby as you sing "I'm a little teapot."



4. STROLLER PUSH-UP

Body Bonus: Strengthens chest and core muscles.

Start: Kneel in front of stroller facing baby. Place each hand on lower edge of stroller foot rest or wheel base. Then walk your knees back until arms are fully extended and head, shoulders, hips and knees form a diagonal line.

Finish: Tighten your abs and bend elbows out to the sides to lower your chest to baby. Hold, then push back up to straight-arm position. Repeat.

Technique Tip: Once you get stronger, balance on your toes, instead of knees by extending legs straight out behind you. Keep hips neither piked pointing up to the ceiling, nor sagging toward the floor, but in a neutral position so body forms a diagonal line from head to toe. Make sure that stroller is stable before doing this exercise.

Holding onto stroller on sides with wrists in neutral may be more comfortable. Skip this exercise if it aggravates your wrists.



5. STROLLER (ISOMETRIC) CRUNCH

Body Bonus:

Firms up abs (and builds a strong core to protect your back.)

Start: Lie on your back in front of stroller, straddle front wheel with legs and scoot close to baby. Bend knees and place feet flat on ground. Hold hands behind head, elbows bent out to side. Do not flatten out the curve in your lower back. Instead, maintain the slight arch by tightening abs, without distorting the spine.

Finish: Raise head, neck and shoulders so shoulder blades just clear the ground, all the while maintaining the natural curve as much as possible. Rather than moving your body forward, hold the raised position without moving for 15 seconds, working up to 30 seconds. Lower and repeat.

Technique Tip: Let head relax in your hands so as not to stress your neck.



6. STROLLER REVERSE CURL

Body Bonus:

Targets six-pack with an emphasis on lower abs.

Start: Lie in front of stroller with top of head next to front wheel. Bring both hands over your head to hold onto the wheel. Then bring both legs up above hips, with knees slightly bent.

Finish: As you exhale, contract abs so hips tilt slightly forward, lower back rising slightly off ground. Hold, then slowly lower legs and repeat.

Technique Tip: Keep movement subtle, focus on contracting abs, rather than using momentum to hike your back off the floor or to swing thighs. Don't let abs pooch out. 