

Exercise and Management of Chronic Back Pain

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Overview

- Background
- Review of Research on Exercise Therapy for Chronic Back Pain
- Veterans Walk to Beat Back Pain

Chronic Pain is Prevalent Among VA Primary Care Patients

- Chart review of 300 patients seen in a VA general medicine clinic, found that approximately 50% suffered from chronic pain, defined as pain persisting for six or more months (Clark et al., 2002)
- Survey of primary care patients receiving care at two VA primary care clinics found that over 70% of participants reported experiencing pain in the last 2 months, with 35% of those reporting always having pain (Crosby, 2006)

Many VA Primary Care Patients Have Multiple Chronic Conditions

- 1,645,315 veterans with ≥ 1 primary care visits during FY97-FY00
- 45 chronic illness diagnosis groups
 - 6% had none
 - 13% had only one
 - 81% had 2 or more
 - Avg. 3.49 (2.2)

(Hitchcock-Noel, Abstract VA IIR 01-110)

Presence of Chronic Pain Among Veterans with Diabetes

Have you had pain that was present most of the time for 6 months or more during the past year?

No = 371

Yes = 557 (~ 60%)

Effect of Chronic Pain Among Veterans with Diabetes: Reported Difficulty with Self-Management

	With Chronic Pain	No Chronic Pain	p
Taking DM meds	8%	4%	.012
Exercising	73%	43%	.000
Following eating plan	54%	37%	.000
Checking blood sugar	19%	15%	0.13
Checking feet	15%	9%	.010

Chronic Pain and Veterans with Diabetes

- Chronic pain is prevalent among VA patients with diabetes
- Chronic pain has negative effect on self-management and specifically on such components as exercise and following an eating plan

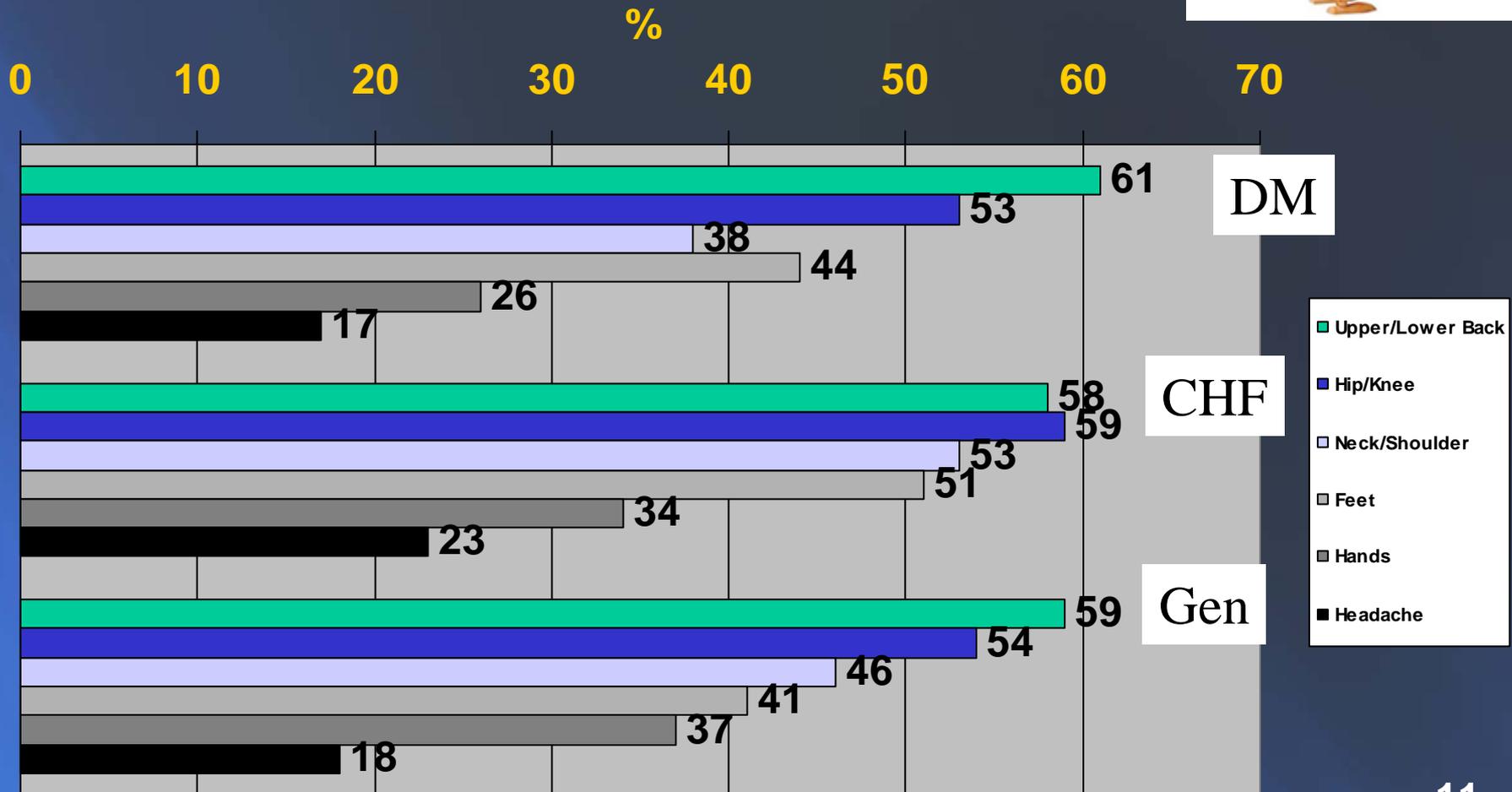
Prevalence Study

- 3 VA patient groups
 - 300 with diabetes (77% response rate)
 - 300 with CHF (71% response rate)
 - 300 general medicine (79% response rate)
- Survey

Chronic Pain Prevalence Among VA Primary Care Patients

DM (n = 222)	CHF (n = 191)	Gen (n = 225)
61%	65%	61%

Where's the Pain?



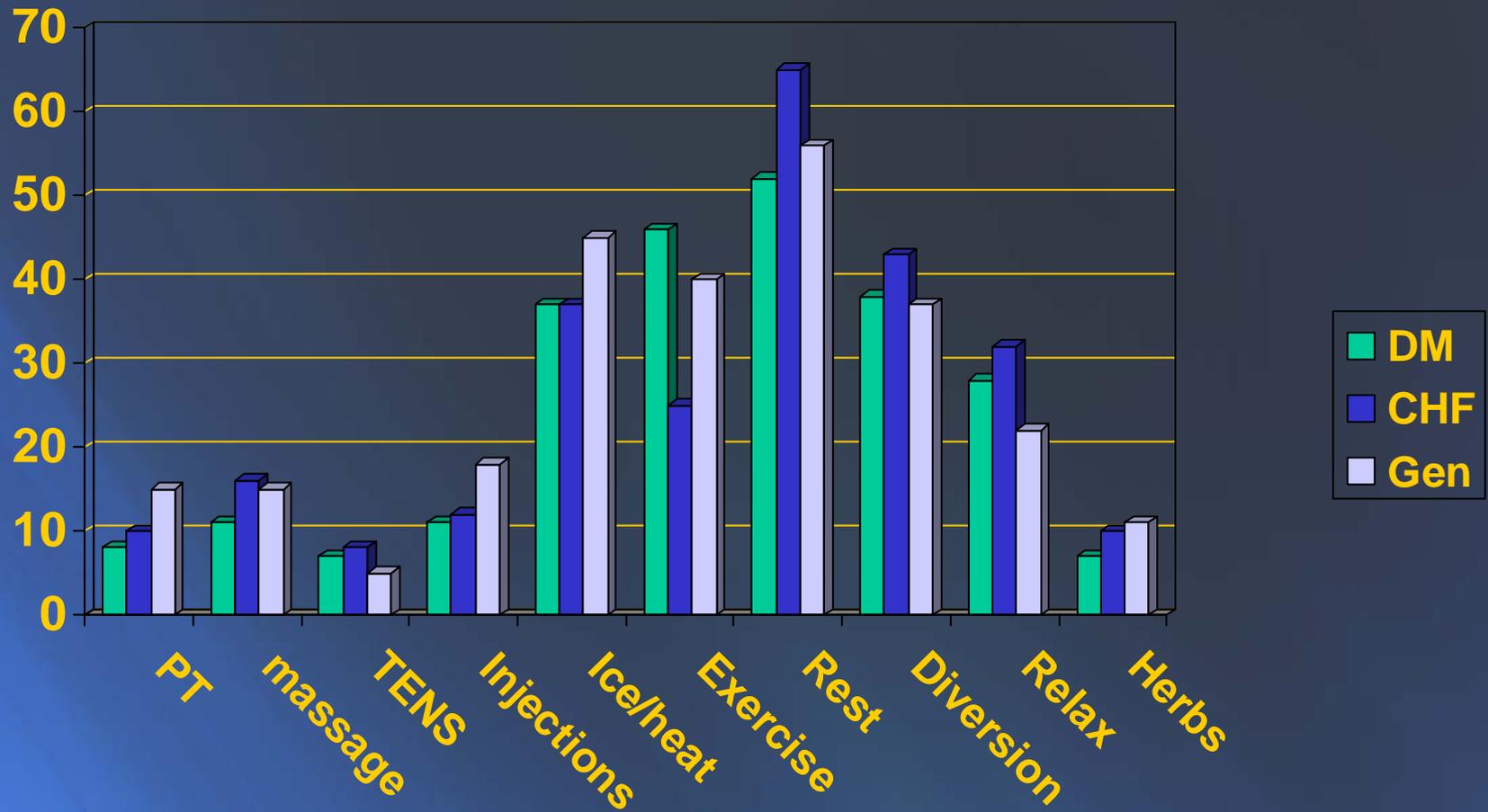
Significantly Lower Self-management Scores for Patients With (w/) Pain vs. Those Without

	DM (n = 86)	DM w/ (n = 135)	CHF (n = 64)	CHF w/ (n = 120)	Gen (n = 86)	Gen w/ (n = 133)
Overall Self-management score	73.6 (15.7)	67.6* (17.8)	72.1 (17.4)	63.7* (15.8)	73.9 (14.5)	66.3* (15.8)

Pain Management and VA Primary Care Patients with Chronic Pain

- 79% used pain medication
- 38% reported pain care was “very good” or “excellent”
- Many used non-pharmacologic strategies

Non-pharmacologic Pain Management Strategies Used By VA Primary Care Patients with Chronic Pain



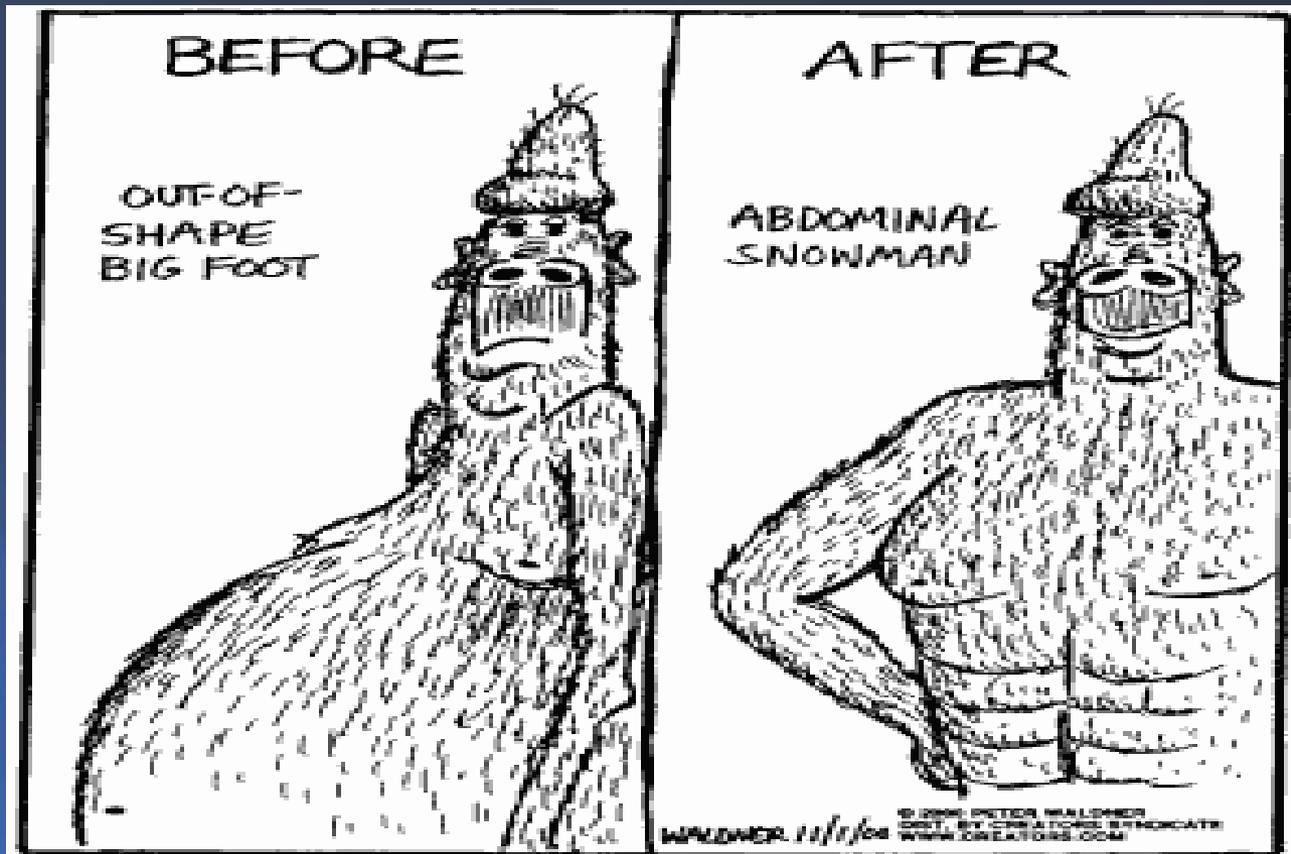
Chronic Pain and VA Primary Care Patients

- Chronic pain is prevalent, particularly back pain
- Chronic pain is associated with increased difficulty with self-management
- Patients use many different strategies to manage chronic pain including some that may not be recommended

VA/DoD Low Back Pain Clinical Practice Guideline Joint Clinical Practice Guideline from the American College of Physicians and the American Pain Society

- Recommendation 7: For patients who do not improve with self-care options, clinicians should consider the addition of nonpharmacologic therapy with proven benefits – for acute low back pain, spinal manipulation; for chronic or subacute, intensive interdisciplinary rehab, exercise therapy, acupuncture, massage, spinal manipulation, yoga, CBT or progressive relaxation.

Exercise is a Common Link in Guidelines and Recommended Management of Most Patients with Chronic Health Conditions



Exercise part of recommended therapy for diabetes, CHF, chronic pain, depression

Brief Review of Evidence on Exercise for Chronic Low Back Pain

Meta-analysis: Exercise Therapy for Nonspecific Low Back Pain

- 61 randomized, controlled trials (6390 participants)
 - Acute (< 6 weeks, 11 trials)
 - Subacute (6 to 12 weeks, 6 trials)
 - Chronic (> 12 weeks, 43 trials, 3907 participants)
 - Unclear (1 trial)

(Hayden et al., Ann Intern Med, 2005)

Exercise Therapy Slightly Effective in Decreasing Pain and Improving Function With Chronic Low Back Pain

- Pain (improvement with exercise)
7.29 points (CI, 3.67 to 10.91) vs. control
- Function (positive effect of exercise)
2.50 points (CI, 1.04 to 3.94) vs. control

Limitations of the Literature on Exercise Therapy for Low Back Pain

- Low quality studies and inconsistency in outcome measures
- Heterogeneity
 - Study populations
 - Higher mean improvements in function and pain in health care study populations compared to occupational or general populations
 - Exercise intervention

(Hayden et al., Ann Intern Med, 2005)

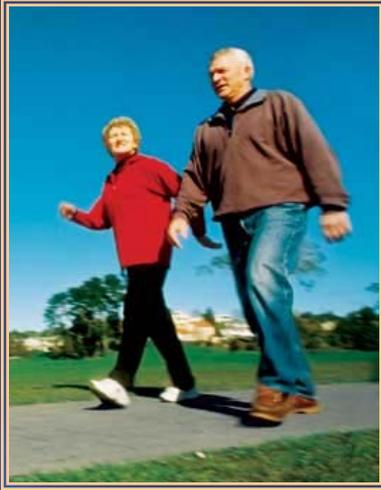
Types of Exercise Therapy for Low Back Pain

Back Schools



- An Intervention consisting of an education and skills program, including exercise therapy, with lessons given to groups of patients and supervised by a therapist or medical specialist. The original Swedish back school included information on anatomy, biomechanics, posture, ergonomics and back exercises delivered during 4, 45 minute sessions over a 2 week period.
- Evidence of efficacy for chronic low back pain vs. placebo or wait list controls is inconsistent. Most studies show no benefit but results in occupational settings and with more intensive programs based on the original Swedish model suggest small benefits.

Exercise Therapy



Supervised exercise program or formal home regimen, ranging from programs aimed at general physical fitness or aerobic exercise to those aimed at muscle strengthening, flexibility, or stretching



- Evidence suggests exercise therapy is at least as effective as other conservative therapies and slightly to moderately superior to no treatment or usual care.

(Chou et al., Ann Intern Med, 2007; van Tulder, Eur Spine J, 2006)

Yoga

- An intervention that uses specific body positions, breathing techniques and emphasis on mental focus. Many styles, each emphasizing different postures and techniques.
- 1 high quality trial found that 6 weeks of Viniyoga was slightly superior to conventional exercise and moderately superior to a self-care education book in improving function at 12 weeks.
- 2 small trials of Iyengar yoga were inconclusive, one showed positive effects on pain and function compared to exercise instruction and the other no differences.
- Pilot study at VA San Diego found that veterans who took part in at least 8 weekly yoga classes reported a significant reduction in pain as well improvements in mood, energy and quality of life.

(Chou, Ann Intern Med, 2007; Sherman, Ann Intern Med, 2005; Groessl, J Alt and Comp Med, 2008)

Yoga study finds mix of health benefits

Boot camp wasn't like this—Veterans (from left) “Big D” Donaldson, Jay Shufeldt and Art Harrison take part in a yoga class with instructor Dawn Landon at the San Diego VA.



Photo by Bevin Walsh

Aquatic Exercise



- Therapeutic aquatic exercise such as aqua-aerobics and aqua-jogging.
- Review of 7 studies (2 focusing on pregnancy related back pain). Six showed benefits but for non-pregnancy related back pain found no significant difference between therapeutic aquatic and land exercises or a weight relief and stretching program with improvements for both groups compared to baseline.
- Studies generally considered low quality and heterogeneous.



(Waller, Clin Rehab, 2009)



Many Unanswered Questions

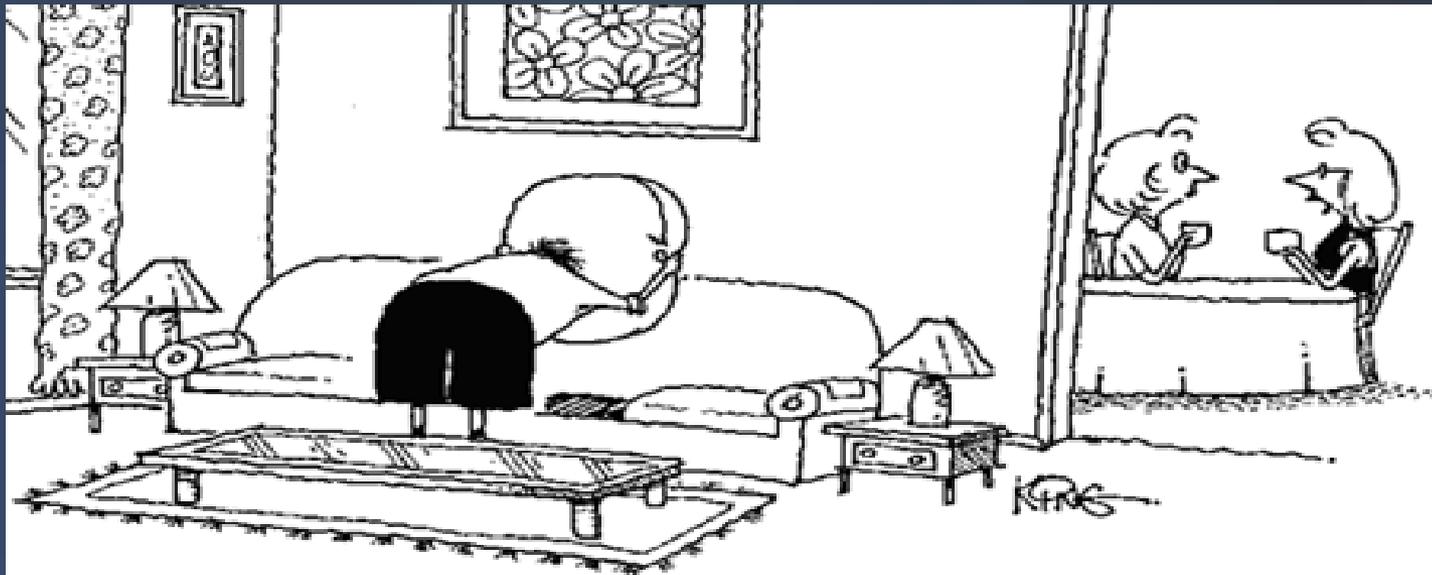
Systematic Review: Strategies for Using Exercise Therapy to Improve Outcomes in Chronic Low Back Pain

- Intervention characteristics
 - **Exercise program design** (individually designed, partially individually designed, standard design)
 - **Delivery type** (home only, supervised home, group supervised, individual supervision)
 - **Dose or intensity** (duration and number of sessions)
 - **Additional interventions**
 - **Types of exercises** (muscle-strengthening, stretching, coordination, mobilizing or flexibility, aerobic)

Characteristics Associated with Improvements in Pain & Function for Chronic Low Back Pain

- Individually designed
- Supervised (e.g., home with regular therapist follow-up or individually supervised)
- Adherence to achieve high dose or high intensity (≥ 20 h)
- Stretching (for pain) and strengthening (for function)

Estimate that a program with these characteristics could improve pain scores by 18.1 points and function by 5.5 points.



The doctor said he needed more activity. So I hide his T.V. remote three times a week.

Can do
Will do
How can we help

Veterans Walk to Beat Back Pain



VA HSR&D IIR 07- IIR 07-177

Intervention to Encourage Exercise for Veterans with Chronic Low Back Pain

- Education
 - Body Mechanics
 - Strengthening and Stretching Exercises
- Tools (Pedometer)
 - Encourage and promote walking
- Ongoing Assistance and Support (Web based)
 - Walking goals and feedback
 - Tips
 - Reinforcement of and Resource for educational materials
 - Communication

Walking

- Requires little skill or training
- Low cost – walking shoes
- Most people can do it
- Low injury rate
- Physical activity of choice for adults
- Easy to objectively monitor

Enhanced (uploading) Pedometer





Veterans Walk to Beat Back Pain

- [Study info](#)
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Current weather

Ann Arbor



- Clear sky
- Temperature 57.2 °F

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Username: *

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Sarah

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Your steps and progress



[View a different day, week or month.](#)

For the week of June 3, 2007 to June 9, 2007, **your goal is 10000 steps per day**. So far this week you have met your walking goal on 1 of 2 days. Your average daily step count for the week 8977 steps.

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Today's weather

68 degrees at Downtown Ann Arbor, MI.

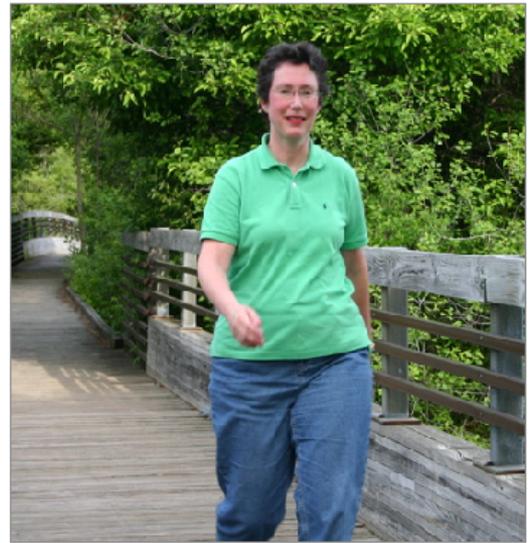


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Today's tip: Master maintenance

So, you have started your exercise program. Maybe you have stopped seeing results. Maybe you are starting to lose motivation. Maintaining your healthy behavior for the rest of your life is your goal -- and your challenge. It's not always easy.



Here are some tips to keep the change when you're tempted not to:

- ◆ **Cut yourself some slack.** The old couch was calling you back and you gave in. But don't give up. Setbacks happen. Falling off track doesn't mean throwing in the towel. Remind yourself that change takes time. Then lace up your sneakers, and get back on track.
- ◆ **Have a plan.** Identify your roadblocks and find ways around them. For instance, your fitness routine easily could run off track during the holidays, business travel, and vacations. Look for hotels with a health club, or pack a jump rope in your suitcase. Include a walking or biking tour of scenic or historic places in your vacation plans.
- ◆ **Review your goals.** If you start to feel it's just not worth it, think about why you decided to change in the first place. Maybe you wanted to lose weight and being active helped you do it. Perhaps you've lowered your blood pressure or are beginning to control your diabetes. Reminding yourself of the goals you've realized and the ones you're still striving for will help you push ahead.
- ◆ **Mobilize your support system.** Call on friends, family members, or coworkers who have been your cheerleaders. They can encourage you to stick with it. Maybe you've formed or joined a support group. Don't hesitate to connect with others who are working on the same change.
- ◆ **Have confidence.** Believe in yourself and don't question your ability to change. If you fail once, try again. Try something else. And learn from your mistakes. With patience and determination, you can change your life.

Done

www.steppinguptohealth.org

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Conclusions

- Exercise is a key component in the management of people with chronic back pain (as well as most other chronic conditions) not to mention that another VA study found that . . .

“A Little Regular Exercise Extends Men’s Lives”

Washingtonpost.com, January 23, 2008

- Most effective exercise regimen and how to effectively and efficiently assist people with using exercise therapy is still to be determined



Thank You!

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