A Pragmatic Trial: Physical Activity to Improve CV Health in Women
1 U01 HL122280-01

Physical Activity Intervention - Stanford University
PI: Marcia L. Stefanick, Ph.D.
Behavioral Scientist: Abby C. King, Ph.D.
Medical Director: Mark Hlatky, M.D.

Data Coordinating Center – FHCRC (WHI CCC)
Multi-PIs: Charles Kooperberg, Ph.D.
Andrea LaCroix, Ph.D. (UCSD)
Co-investigators: Lesley Tinker, Ph.D.
Primary Hypothesis: Endurance physical activity combined with muscle strengthening, balance & flexibility exercises, and reduced sedentary behavior (sitting) will reduce major CV events (MI, stroke, CV death) in older women, compared to “usual activity” (Control) over 4-5 years.


Implemented through: National Institutes on Aging (NIA) http://go4life.nia.nih.gov/

Primary Aim: Conduct a pragmatic trial in ~50,000 women (aged 65+ yrs) in the WHI Extension Study, for whom CV outcomes are available (WHI Medical Records Cohort or CMS linkage), randomized to a centralized physical activity intervention or “usual activity” (Control).

Primary Safety Aim: Evaluate whether the PA intervention increases risk of total clinical fracture, hip fracture, falls, or non-CVD mortality

Secondary Aim: Evaluate whether the PA intervention reduces risk of selected PA-linked secondary outcomes, potentially ameliorable through regular physical activity, of importance to maintaining independence in older women.
Randomized Consent Study Design

Based on Zelen. N Eng J Med 1979

49,936 WHI participants were randomized

*Inclusion:
- Alive, WHI Extension Study consent
- CV Outcomes available
  - Medical Records Cohort or CMS,
    - i.e. linkage to Medicare

*Exclusions:
- dementia
- living in a nursing home
- self-reported inability to walk

Primary Outcomes: major CV events (MI, Stroke, CV Death)
Fall 2016, New Survey

“PA Cohort”: Mailed out Oct 2016 N = 21,693

WHISHful Actions
Fall in Love with Autumn Activity
Women’s Health Initiative Strong & Healthy (WHISH)
Fall 2016

Say Hello Again to Jana, Marta, Annette, Barbara and Dee

Have you changed your physical activity level since WHISH started? Who do you most closely identify with now, in terms of your physical activity level?

Jana: reads WHISH materials; filled out the physical activity action plan; occasionally wears her pedometer to watch her step counts.

Marta: sits less; wears her pedometer most days; spends more time playing with her grandchildren at the park.

Annette: reduced activity to care for a loved one, but is back to golfing and gardening and longer walks; plans to do muscle strengthening activities from the Go4Life book.

Barbara: loves her weekly strength and yoga classes; meets the national guidelines of 2 hours and 30 minutes of aerobic activity per week.

Dee: has maintained her active life; she relishes her social dance classes; swims and stretches regularly and she added muscle strengthening to her routine.
Fall 2016, New Survey

“PA Cohort”: Mailed out Oct 2016 N = 21,693

Balance and Flexibility
Preventing Falls

Don’t take balance and flexibility for granted! The U.S. Surgeon General’s Report on bone health emphasizes the importance of preventing falls to prevent fractures and other injuries. Falls are not just the result of getting older. Whether you feel strong and sturdy, or weak and wobbly, exercises that improve balance and coordination (like tai chi) are the most helpful. Lack of physical activity can lead to weakness and increases your chance of falling. Flexibility improves your ability to do activities of daily living, such as making the bed, bending over to tie your shoes or pick things up, looking over your shoulder while driving, and many other actions.

Your Go4Life book has tips and exercises for both balance (pgs 63-68) and flexibility (pgs 69-89). Modify these exercises to fit your lifestyle and abilities, to do on your own or with others, such as in a yoga, dance, or group fitness class. Wear shoes that give good support and remove things that you might trip over or slip on.

Can you find at least one balance and flexibility exercise in the Go4Life book to add to your routine?

Balance the Challenges of Caregiving
Caring for Yourself with Physical Activity

Audrey is the primary caretaker for her husband who has been diagnosed with Alzheimer’s disease. She understands that to have the physical and mental energy to care for her loved one, she must protect her own health and well-being.

In Her Words...
An average day as a caregiver

First thing in the morning, Audrey helps her husband with his morning routines. An aide comes in to dress him and then he goes to senior care for a couple hours while she does her daily activities or attends a caregiver support group.

Staying physically active as a caregiver

Audrey attends yoga classes, swims, and goes for walks. Her physical activity goal is to be active for about an hour each day. Some days she exceeds her goal. Swimming is also her meditation time. All she has to think about is the number of laps she is swimming.

Balance caring for her loved one with caring for herself

Morning time works best for her to be active. She has support from her family who live close by. They will help if she needs them. She also relies on the senior care that her husband attends while she cares for herself. She has always been active and knows physical activity is something she can do to clear her head.

What advice do you have for other WHISH women who are primary caregivers in regards to caring for yourself while you care for a loved one?

“You have to have an independent life, and can’t just be there 24/7. You have to have something [to focus on] besides your [loved one] to get your mind off of things.”

WHISH Survey

Tell us how we are doing!
What do you like about WHISH and what can we improve? Please complete the enclosed survey and send it back in the enclosed envelope!
LIFE HAPPENS

Holidays Are Just Around the Corner!

With shorter days, long to-do lists, and family and friend time, it can be challenging to stay physically active during the holiday season. But, the festivities can also provide opportunities to get out of your regular routine. Who knows, you may fall in love with autumn activities!

- Try the quintessential fall activities of raking leaves, apple picking at a local orchard, or planting vegetables for your winter garden.
- With shorter days, it can be challenging to find time to exercise outdoors. Try to go for a walk earlier in the day and enjoy the brilliant fall foliage or fall holiday decorations.
- Challenge yourself by lifting pumpkins at a pumpkin patch or doing arm curls with little pumpkins.
- If you are a walker or a jogger, try a holiday themed fun run such as the Turkey Trot. Encourage your family or friends to join!
- Spending time with family does not have to mean sitting around and eating all day. Take an autumn walk before or after your holiday feast.
- Start your holiday shopping early. Shopping can give you more steps and strengthen your muscles. Take another lap around the mall for more steps or carry a shopping bag for muscle strengthening.

Can you find opportunities to move more during holiday festivities?

Moving More is What Counts

If tracking your activity helps motivate you to be active, you now have three WHISH tools:

1. “Adriana”  
   Call “Adriana” anytime to track your activity at (844) 320-6683 or (844) 320-MOYE.

2. Activity Tracking Website  
   Log on to whish.org and click on the blue button (“Click Here to Log My Activity”).

3. Calendar  
   Use your 2017 calendar to record your daily activity.

To Get in Touch with WHISH:
whish-team@stanford.edu | (844) 469-4474
Stanford Prevention Research Center - WHISH
1070 Arastradero Road, Suite 100 | Palo Alto, CA 94304
Looking Back and Looking Forward

Happy New Year! Have you made any active resolutions for 2017? Now is the perfect time to look back to where you started when WHISH began, assess your progress, and make new goals. Pull out your past “Action Plans” (“Get Ready, Get Set, Go!” and “Spring Into Action”) and compare them with your current activity level. Set your new 2017 goals here (see page 92 in the Go!Life book):

- Endurance: My distance or steps ___________ My time ___________
- Muscle Strength: Upper-body ___________ Lower-body ___________
- Balance: Time on left foot ___________ Time on right foot ___________
- Flexibility: I can reach my ________ (left leg) I can reach my ________ (right leg)
- My Current Level of Activity is: ___________
- Activities I Will Try: ___________
- My Physical Activity Goals: Short-term ___________ Long-term ___________

We WHISH you an active New Year!

Show Us How You Stay Active!

Do you have a great action photo that you would be willing to share with us? Or, an inspiring story? We have featured many WHISH women’s stories in WHISHful Actions and on our website. Now, we want to feature you! Send us an email or letter about how you are staying active. Seeing your story may motivate another WHISH woman!

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LIFE HAPPENS

Getting Back On Track After the Holidays

You may feel a lull after the excitement and joy of the holidays. With fewer holiday events on the horizon this may be a good time to refocus on your health goals and reestablish your active routine. Staying active could lift your mood.

- Set Goals. Updating your goals can help you stay on track after a break from activity. Write your activity goals on the front page of this WHISHful Actions.
- Take It Slow. Build up gradually to avoid injuries.
- Just Do It! Sometimes all you need to do is to put on your walking shoes and take that first step out the door!
Winter 2017

WHISH Resources For You

Check out the physical activity resources on our website (whish.org)! We want to make it easy for you to find a local gym, hiking trail, senior center (with exercise classes), swimming pool, or workout videos you can do in the comfort of your home. Several WHISH women have shared how they stay active with local, state-wide and national resources. Do we have your local resources on our website? Please let us know!

1. SHIRLEY B., 82, Scottsdale, AZ After retirement, Shirley moved to Arizona where she decided to get back to exercising. She found a nearby senior center that offered aerobics and weight lifting classes. She has been focusing on weight training for 15 years. Her goal is to do muscle strengthening exercises three days a week which is helpful for her arthritis and bones. Shirley wants women with these concerns not to be afraid to try lifting light weights. She encourages other WHISH women to stay active to be healthy and enjoy each day.

2. SALLY R., 71, East Moline, IL Sally uses the paddling machine with an exercise regime from the Mayo Clinic. This device allows her to activate her legs while reading at home.

3. FRAN, 78, Skokie, IL Fran goes to her local YMCA for two strength classes per week and swims laps in the pool six days a week! She says swimming is “my first sport and love since 1942.”

Strength Training

Winter is the perfect time to focus on muscle strengthening especially if you live in a cold climate. You can do these activities indoors! We have enclosed a WHISH resistance band and sample exercises (see insert) to strengthen your upper- and lower-body in the comfort of your own home! Here are other WHISH women doing strength training activities around the country.

1. LEONA S., 87, Olympia Fields, IL Leona lives in a retirement community that offers many activities and classes, including a strength and balance class that she attends two times a week. She enjoys using resistance bands because they can be modified to her ability. She’s been seeing and enjoying the results!

2. RACHEL M., 86, Tucson, AZ Rachel lifts soup cans as part of her upper-body strength exercises! Can you?

3. JOANIE W., 76, Columbus, OH Joanie lifts weights in her gym, strengthening her muscles and protecting her bones.

4. SUSAN G., 73, Winnemucca, NV “I try to get exercise every day in my normal activities. In the picture, I am hauling bags of clothes (weighing 15-25 lbs each) from point A to point B. This is part of my volunteer job at a thrift shop.”

Have You Returned Your WHI Forms?

Please Return Your Survey!
Winter 2017

Resistance Bands

Some important tips include:
- Try all exercises without the resistance band to practice the movement with correct posture.
- For all exercises, sit toward the front of a sturdy chair with correct posture.
- Do 8 to 15 repetitions twice for each exercise. To make it more difficult, tighten the band.
- Hold the band tightly, or securely wrapped around your hand or under your foot.
- Keep movements smooth and steady. Take 3 seconds to return to starting position.
- For more information on building strength see pages 40-44, go to whish.org, or talk with your personal trainer or physical therapist.
- WHISH bands contain latex.

Stop any exercise if you feel pain!

EXERCISES with WHISH
Principal Investigator, Dr. Marcia Stefaniak

Arm Curl

- **Step 1:** Sit with correct posture. Place the band under your feet and hold on to each end.
- **Step 2:** Slowly pull the band up towards your chest as much as possible and then return to the starting position.

This helps... you pull yourself up

Ankle Flexion

- **Step 1:** Sit with correct posture. Place the band around the ball of your foot, hold the ends of the band, and point your toes towards your shin.
- **Step 2:** Slowly point toes away from you. Then return to the starting position.

This helps... improve ankle stability to prevent falls

Chair Squat

- **Step 1:** Sit with correct posture. Place the band under your feet and hold on to each end.
- **Step 2:** Slowly move to a full standing position and return back to a seated position.

Knees and nose do not go past toes

This helps... increase ability to get in and out of seats

Scapula Squeeze

- **Step 1:** Sitting with correct posture, hold the band in each hand with your palm side up. Gently squeeze your shoulder blades back and down.
- **Step 2:** While holding the shoulder blade, squeeze, pull your hands away from each other while keeping your elbows by your sides. Then return to the starting position.

*See pages 60 & 61 for modifications

Stop any exercise if you feel pain!

*Additional Exercises: Seated Row (page 52), Buddy Stretch (page 89)
Spring is a great time to shake off the winter blues and take stock of what you do to stay active. Your daily activities might include spring cleaning activities like scrubbing, mopping, vacuuming; carrying laundry; lifting grocery bags or heavy pots; climbing stairs; gardening; walking your dog; or just walking or playing with grandchildren. What are YOUR daily activities?

Are you willing to add a couple of exercises to your week to make these daily activities easier? Inside, a few WHISH women tell you about their regular activities, and we provide a corresponding exercise you can do to make that activity easier!
1. Reaching Up High
Carol L., 81, of Downers Grove, IL uses a step stool to reach for items in her tall cabinets. She stays active by walking, line dancing, stretching and lifting weights.

How To:
- Keep feet flat on the floor
- Shoulder-width apart
- Interlace hands together
- Exhale and raise arms over head
- Lift arms as high as feels comfortable

2. Gardening; Lifting
Lynn H., 75, of Vista, CA has been an organic gardener all her life and tends to her garden almost every day. She also practices her balance by standing on one foot, one minute each, when she brushes her teeth!

How To:
- Stand with feet hip-width apart
- Hinge at your knees and hips (like you are sitting back into a chair) and raise arms so they are parallel to the floor
- Keep your knees over toes and your back straight. Press through your heels and stand up straight

3. Housework
Olivia R., 78, of Sebring, FL stays active by doing housework, going for walks, biking, volunteering at her church, taking care of her husband, participating in Relay for Life, and tending to her orchids.

How To:
- Stand with feet shoulder-width apart
- Bend elbows and bring dumbbells up to chest, keeping elbows by your side
- Lower dumbbells back to starting position

4. Climbing Stairs
Each day, Melinda R., 77, of Oak Park, IL walks up and down the stairs of her building. She also does yard work, goes shopping, and runs errands.

How To:
- Walk uphill either outdoors on a natural incline, or walk on an incline using a treadmill at a local fitness center.

*See page 60 in the GoALive book for chair stand instructions
Spring 2017

WHISH Challenge Example Activities

When completing the WHISH Challenge (SEE REVERSE SIDE) you can try the activities listed below OR come up with your own activities. Be creative!

<table>
<thead>
<tr>
<th>Endurance (Cardio)</th>
<th>Upper-body Strength</th>
<th>Try A New Activity!</th>
<th>Lower-body Strength</th>
<th>Balance &amp; Flexibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swim, cycle, dance, walk up and down the stairs, jog, aerobics class</td>
<td>Lift weights, grandchildren, pets, grocery bags, cans, do wall push ups</td>
<td>Zumba, use pedometer, Garden, Pilates, yoga, tennis, group fitness</td>
<td>Leg extension, side leg raise, chair stand, WHISH resistance band handout exercises</td>
<td>Stretch, yoga, Pilates, chair stretches, back leg raise, heel-to-toe walk</td>
</tr>
</tbody>
</table>

WHISH Activity Definition Refresher

1. Active minutes: Endurance activities increase your breathing and heart rate (e.g., swimming, dancing, gardening, vacuuming, brisk walking, climbing stairs or hills) and are performed in episodes of at least 10 minutes.

2. Upper-body muscle strength: Go4Life examples of upper-body muscle strengthening include hand-grip (pg. 45), overhead arm raise (pg. 47), and wall push-ups (pg. 53).

3. Lower-body muscle strength: Go4Life examples of lower-body strengthening include back leg raises (pg. 56), side leg raises (pg. 57), and toe stands (pg. 62).

4. Balance and Flexibility: Go4Life examples of balance and flexibility activities include standing on one foot (pg. 65) and shoulder stretch (72).

WHISH Website: Go to whish.org to find local and national resources!

Each time you complete a healthy activity, record it under the appropriate category in a single box below that heading. Once you have filled in all of the boxes for each of the 5 categories, return this challenge using the enclosed envelope by May 15, 2017. You may win a prize!

Endurance (Cardio) | Upper-body Strength | Try A New Activity! | Lower-body Strength | Balance & Flexibility
--- | --- | --- | --- | ---
|  |  |  |  |  

*Fill in squares using activities listed on the reverse side, OR come up with your own activities!
WHISHful Actions
All About You!

Women’s Health Initiative Strong & Healthy (WHISH)
Summer 2017

We Have Learned So Much From You!

THANK YOU to all of you who filled out our ‘What’s Your WHISH Now?’ survey. Our goal is to find out more about how exercise affects women’s health and would not be possible without your dedication to both WHI and WHISH. We want to share the most interesting findings that we learned from YOU!

Look inside to learn about the 22,000 WHISH women who live nationwide (including Hawaii and Alaska).

How You Use WHISH Tools

Pedometer
I wear my pedometer every day and make a point of going for a walk every day in addition to my exercise classes. I have a whole new attitude about forgetting something in the basement. I just think, ‘Wow, that’s more steps for me!’
- Hildy McGown, 82

WHISHful Actions
Receiving your encouraging ‘Spring Into Action’ with its beautiful pictures of other participants has revved me up!
- Gloria S Powell, 85

Activity Calendar
I like the pedometer it is a good guide for the steps I take a day and the calendar is a helpful guide I need to walk more today than I did yesterday.
- Dorothy B. Cannon, 88

Go4Life Book
I sit less. I dance around in the living room to music for 30 minutes, 5 days a week. The Go4Life book has great examples for exercise. I have been raking leaves and planting vegetables.
- Myrna O Tuggle, 77

WHISH Websites
I am very glad to be involved in the WHISH study. I am now more active even through a diagnosis of breast cancer a year ago. I recently started recording activity on the website and find it helpful so I will fill in one week a month so I can see my progress.
- Carol S Breuch, 74

“Adriana”
The phone messages from “Adriana” are the best! They actually cause me to feel supported. They are so positive in content and tone. Realistic too.
- Judith A Long, 74
Mailed Oct-Nov 2016: N = 21,693
2nd mailing Jan 2017: 3rd April 2017
### Characteristics of WHISH PA-I group

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Overall N=21,692</th>
<th>Respondents N=10,959 (51%)</th>
<th>Non-respondents N=10,733 (49%)</th>
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</thead>
<tbody>
<tr>
<td><strong>Age at Randomization</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;77 years</td>
<td>7789 (35.9)</td>
<td>4401 (56.5)</td>
<td>3388 (43.5)</td>
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<tr>
<td>77-82 years</td>
<td>7249 (33.4)</td>
<td>3717 (51.3)</td>
<td>3532 (48.7)</td>
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<tr>
<td>≥ 83 years</td>
<td>6652 (30.7)</td>
<td>2839 (42.7)</td>
<td>3813 (57.3)</td>
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<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>White</td>
<td>18101 (83.5)</td>
<td>9324 (51.5)</td>
<td>8777 (48.5)</td>
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<tr>
<td>African American</td>
<td>2129 (9.8)</td>
<td>908 (42.6)</td>
<td>1221 (57.4)</td>
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<tr>
<td>Hispanic <strong>(English Speaking)</strong></td>
<td>748 (3.5)</td>
<td>369 (49.3)</td>
<td>379 (50.7)</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>426 (2.0)</td>
<td>228 (53.5)</td>
<td>198 (46.5)</td>
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<tr>
<td>Native Am/Alaskan</td>
<td>63 (0.3)</td>
<td>29 (46.0)</td>
<td>34 (54.0)</td>
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<tr>
<td>Other/Unknown</td>
<td>223 (1.0)</td>
<td>99 (44.4)</td>
<td>124 (55.6)</td>
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<td><strong>Region (WHI)</strong></td>
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<tr>
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<td>3055 (47.6)</td>
<td>3359 (52.4)</td>
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<td>4845 (22.3)</td>
<td>2356 (48.6)</td>
<td>2489 (51.4)</td>
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<td>Midwest</td>
<td>5318 (24.5)</td>
<td>2771 (52.1)</td>
<td>2547 (47.9)</td>
</tr>
<tr>
<td>West</td>
<td>5113 (23.6)</td>
<td>2775 (54.3)</td>
<td>2338 (45.7)</td>
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</table>
### Characteristics of WHISH PA-I group

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<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
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<tr>
<td>BMI (kg/m²)</td>
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<tr>
<td>&lt; 24.9</td>
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<td>24.9-29.4</td>
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<tr>
<td>≥ 29.5</td>
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<td>33.0</td>
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<td>3736</td>
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<tr>
<td>≥ 90</td>
<td>7260</td>
<td>33.5</td>
<td>4186</td>
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</table>
My Physical Activity Level since WHISH started has:

- **Blue**: Increased a lot or somewhat
- **Red**: Not changed; remained the same
- **Green**: Decreased somewhat or a lot

### Percent

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Increase</th>
<th>Same</th>
<th>Decrease</th>
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<tbody>
<tr>
<td>&lt; 77</td>
<td>41%</td>
<td>14%</td>
<td>41%</td>
</tr>
<tr>
<td>77-82</td>
<td>34%</td>
<td>21%</td>
<td>45%</td>
</tr>
<tr>
<td>≥ 83</td>
<td>24%</td>
<td>35%</td>
<td>41%</td>
</tr>
</tbody>
</table>

**Legend**
- PA: Physical Activity
3108 reported their Physical Activity level had increased since WHISH started. How? [Mark all that apply]

- Walking more
- Sitting less
- Upper Body*
- Balance
- Lower Body*
- Flexibility
- Aerobic activity
- Walking faster
- Other

*strengthening exercises
1962 reported their Physical Activity level had decreased since \textit{WHISH} started. Why? [Mark all that apply]
3939 reported their Physical Activity level had remained the same since WHISH started. Why? [Mark all that apply]

- Already Regularly active
- Lack of Health issues
- Lack of Energy/interest
- Volunteer Commitments
- Materials not motivating
- Too busy
- Caregiving
- Fear of falling
- Work-related
- No exercise partner
- None

Reasons PA Remained the Same
Top Two Reasons you want to be physically active?

[Mark only two.]

- Personal Health
- Maintain/Regain Independence
- Enjoyment
- Family
- Social Interaction
- Not interested in being active
- Other

TOP REASONS
Which (if any) of the following materials have helped you to become more physically active (or to maintain your physical activity level) since WHISH started?

- Newsletter
- Go4Life®
- Pedometer
- Calendar
- Website
- Adriana
- Emails
- None
Women’s Health Initiative
Strong & Healthy (WHISH)
1 U01 HL122280-01

Adriana
Krauss

Rebecca
Drieling

Renae
Jennings

Katie
Weber

Gaelyn
Georgia

Katelyn
Fishpaw

Abby
King

Marcia
Stefanick

Cynthia
To

Valerie
McGuire