

University of Vermont

UVM ScholarWorks

Family Medicine Clerkship Student Projects

Family Medicine Community

2021

Exercise and Physical Therapy in the Elderly

William Holden

Follow this and additional works at: <https://scholarworks.uvm.edu/fmclerk>



Part of the [Physical Therapy Commons](#), and the [Public Health Education and Promotion Commons](#)

Recommended Citation

Holden, William, "Exercise and Physical Therapy in the Elderly" (2021). *Family Medicine Clerkship Student Projects*. 702.

<https://scholarworks.uvm.edu/fmclerk/702>

This Book is brought to you for free and open access by the Family Medicine Community at UVM ScholarWorks. It has been accepted for inclusion in Family Medicine Clerkship Student Projects by an authorized administrator of UVM ScholarWorks. For more information, please contact scholarworks@uvm.edu.



Exercise and Physical Therapy in the Elderly

William Holden
Colchester Family Medicine
1/21-2/21
Mentor: Travis Robillard, PA



Problem Identification

There are many current barriers to participating in exercise and physical therapy in the elderly, including:

- Cost (gym membership, physical therapy, workout equipment, transportation)
- Health (immunocompromised, obesity, musculoskeletal pain, cardiovascular disease, pulmonary disease)⁵
- Environment (workout spaces, sidewalks, parks)⁵
- Interpersonal factors (motivation, personal enjoyment)⁵
- Safety of environment (SARS-CoV-2 pandemic, cold weather, ice, crime)
- Time constraints
- Lack of knowledge⁵
- Lack of physician advice⁴



Public Health Cost

Epidemic of inactivity

- 34.2% inactive and 20.2% insufficiently active in the United States¹
- 27.5% of adults over 50 years old reported no physical activity outside of work⁷
- Inactivity significantly increases with increasing age⁷

Inactivity contributes to a substantial economic burden

- 11.1% of national healthcare costs¹

Preventable death

- 8.3% of deaths of non-disabled adults over 25 attributed to physical inactivity in the United States²

Non-communicable disease

- Worldwide, inactivity accounts for 6% of coronary heart disease, 7% of diabetes mellitus type 2, 10% of breast cancer, 10% of colon cancer, and 9% of premature mortality⁶



Vermont Statistics

Nearly $\frac{1}{5}$ report being inactive³

- 19.6% of females
- 20.4% of males

Multiracial or non-white individuals reported higher inactivity³

Those with lower education or lower income report higher inactivity³

Older individuals report higher inactivity³



Community Perspective

What barriers do you see in engaging with physical therapy?

“There is certainly a financial and time commitment associated with PT. I think people view PT as work versus a quick fix with medication/surgery. I think that a lack of knowledge as to what PT can/should provide is a barrier for both patients and PCPs. PT can be a first line of defense not only for rehabilitation but for injury prevention as well.”

-Neil MacKenzie PT, DPT, OCS

“One potential barrier is patient perception about the safety of in person visits and/or the perception of the benefit of a telehealth visit with a physical therapist.”

-Jennifer Levy PT

Do you think it would be helpful to provide basic physical therapy exercises to patients if they cannot attend physical therapy sessions?

“Yes as long as rationale can be given as to why the individual is performing each exercise. It is also important to be able to modify exercises as necessary if people have difficulty performing certain tasks.”

-Neil MacKenzie PT, DPT, OCS



Community Perspective

Do you feel it is safe for primary care providers to hand out physical therapy exercises if they come from a reputable source?

“Definitely. As long as the PCP has an understanding of the true anatomical source of pain, giving out exercises is a great way to speed up access to care. I think it can be difficult with the amount of knowledge a PCP has to sort through whereas I have the ability to focus on orthopaedic populations.”

-Neil MacKenzie PT, DPT, OCS

“I think it could be safe, but I do not think it serves the same purpose as having a physical therapy evaluation. Many times I see patients who have received exercises from their doctor, and the patients have questions or are confused about the exercises. In many cases, the exercises have been helpful, but the patient still requires the skills of a physical therapist.”

-Jennifer Levy PT



Intervention and Methodology

Using reputable online resources, we created a handout containing a list of exercises that can be completed safely at home without equipment. It was designed for elderly individuals, as inactivity tends to increase with age and this population is particularly vulnerable to the deleterious effects of inactivity. The strength and flexibility exercises primarily target the back, hips and core, common problem areas in the elderly. The handout will contain links to further resources for more in-depth physical therapy exercises and will be tailored for administration in a primary care setting.

Handout



Hip Abduction

Step-by-step directions

- Lie on your side with your first leg on top and the bottom leg bent to provide support.
- Straighten your top leg and slowly raise it to 45°. **Keep your knee straight, but not locked.**
- Hold this position for **5 seconds**.
- Slowly lower your leg and relax it for **2 seconds**.
- Repeat, then complete exercise on the other side. **Repeat this 8 times**. Do this exercise **2 or 3 times per week**.

Interested in more **bodyweight workouts**?

Visit:

https://www.cdc.gov/physicalactivity/downloads/growing_stronger.pdf

<https://orthoinfo.aaos.org/en/staying-healthy/>

Seated Rotation Stretch

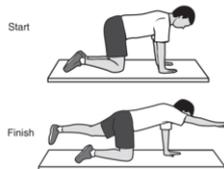
Step-by-step directions

- Sit on the floor with both legs straight in front of you. Cross one leg over the other.
- Slowly twist toward your bent leg, putting your hand behind you for support.
- Place your opposite arm on your bent thigh and use it to help you twist further.
- Look over your shoulder and hold the stretch for 30 seconds. Slowly come back to center.
- Reverse leg positions and repeat the stretch on the other side. Repeat the entire sequence **4 times**. Do this exercise **daily**.



Indoor Exercises for Vermont Winters

Family Medicine – Colchester
883 Blakely Road
Colchester, VT 05446



Bird Dog

Step-by-step directions

- Begin on your hands and knees with your shoulders positioned over your hands and your hips directly over your knees.
- Tighten your abdominal muscles and raise one arm straight out to shoulder-height and level with your body. Hold until you feel balanced.
- Slowly lift and extend the opposite leg straight out from your hip.
- Tighten the muscles in your buttocks and thigh and hold this position for **15 seconds**.
- Slowly return to the start position and repeat with the opposite arm and leg. **Repeat 5 times**. Do this exercise **daily**.

Tip: Keep your stomach muscles tight and your **back flat** to stay balanced.

Hip Bridge

Step-by-step directions

- Lie on your back on the floor with your arms at your sides, your knees bent, and your feet flat on the floor.
- Tighten your abdominal and gluteal muscles and lift your pelvis so that your body is in a straight line from your shoulders to your knees.
- Hold this position for **15 seconds**.
- Slowly return to the start position and **repeat 5 times**. Do this exercise **daily**.

Tip: Center your weight over your shoulder blades. **Do not tense up** in your neck.



Knee to Chest

Step-by-step directions

- Lie on your back on the floor with your legs extended straight out.
- Bend one knee and grasp your shinbone with your hands.
- Gently pull your knee toward your chest as far as it will go.
- Hold the stretch for **30 seconds** and then relax for 30 seconds.
- Repeat on the other side, then pull both legs in together. Repeat the entire sequence **4 times**. Do this exercise **daily**.

Tip: Keep your lower back pressed to the floor.

Interested in starting an **exercise program**?

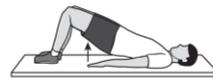
Visit: <https://orthoinfo.aaos.org/en/staying-healthy/seniors-and-exercise-starting-an-exercise-program/>

Back conditioning materials:

https://orthoinfo.aaos.org/globalassets/pdfs/2017-rehab_spine.pdf

Hip conditioning materials:

https://orthoinfo.aaos.org/globalassets/pdfs/2017-rehab_hip.pdf





Effectiveness & Limitations

Effectiveness:

- Handout can be easily administered in the primary care setting
- Exercises do not require any additional equipment
- Handout targets common problem areas in elderly population

Limitations:

- Those without internet access cannot view the supplemental resources
- Exercises require a space in the home
- Handout does not reach those who are not seen in primary care setting
- Included exercises limited by space on handout



Future Investigations

Further research should aim to investigate the most effective interventions to increase physical activity with careful consideration of the barriers to exercise and physical therapy.



References

1. Carlson, Susan A., Janet E. Fulton, Michael Pratt, Zhou Yang, and E. Kathleen Adams. "Inadequate Physical Activity and Health Care Expenditures in the United States." *Progress in Cardiovascular Diseases* 57, no. 4 (January 2015): 315–23. <https://doi.org/10.1016/j.pcad.2014.08.002>.
2. Carlson, Susan A., E. Kathleen Adams, Zhou Yang, and Janet E. Fulton. "Percentage of Deaths Associated With Inadequate Physical Activity in the United States." *Preventing Chronic Disease* 15 (March 29, 2018): 170354. <https://doi.org/10.5888/pcd18.170354>.
3. Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2019
4. Balde, Alseny, Jaime Figueras, Dawn A. Hawking, and John R. Miller. "Physician Advice to the Elderly about Physical Activity." *Journal of Aging and Physical Activity* 11, no. 1 (January 2003): 90–97. <https://doi.org/10.1123/japa.11.1.90>.
5. Schutzer, K. "Barriers and Motivations to Exercise in Older Adults." *Preventive Medicine* 39, no. 5 (November 2004): 1056–61. <https://doi.org/10.1016/j.ypmed.2004.04.003>.
6. Lee, I-Min, Eric J Shiroma, Felipe Lobelo, Pekka Puska, Steven N Blair, and Peter T Katzmarzyk. "Effect of Physical Inactivity on Major Non-Communicable Diseases Worldwide: An Analysis of Burden of Disease and Life Expectancy." *The Lancet* 380, no. 9838 (July 2012): 219–29. [https://doi.org/10.1016/S0140-6736\(12\)61031-9](https://doi.org/10.1016/S0140-6736(12)61031-9).
7. Watson, Kathleen B., Susan A. Carlson, Janelle P. Gunn, Deborah A. Galuska, Ann O'Connor, Kurt J. Greenlund, and Janet E. Fulton. "Physical Inactivity Among Adults Aged 50 Years and Older – United States, 2014." *MMWR. Morbidity and Mortality Weekly Report* 65, no. 36 (September 16, 2016): 954–58. <https://doi.org/10.15585/mmwr.mm6536a3>.



Consents

Thank you for agreeing to be interviewed. This project is a requirement for the Family Medicine clerkship. It will be stored on the Dana Library ScholarWorks website. Your name will be attached to your interview and you may be cited directly or indirectly in subsequent unpublished or published work. The interviewer affirms that he/she has explained the nature and purpose of this project. The interviewee affirms that he/she has consented to this interview.

Consented

Name: Neil MacKenzie PT, DPT, OCS

Name: Jennifer Levy PT