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Wellness and Longevity Program for Adults and Older Adults

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Wellness and Longevity Program for Adults and Older Adults

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 Dr. Aaron Green, PhD & Iridium Enterprises
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Introduction

- There is still an absence of occupational therapists striving to become entrepreneurs and starting their own practices compared to physical therapists (Anderson & Nelson, 2011).
- Utilizing proactive steady-state (static) balance tasks with mobility in daily life, such as standing up from a chair while reciting a poem and holding a cup of water, was beneficial for increasing ADL performance (Gschwind, 2013).
- Regular resistance training will increase muscle mass, which increases bone-mineral density, decreasing the chance of breaking a bone during a fall (Caserotti et al., 2008).
- 14 RTC's reported that resistance training increases functional capacity (e.g. gait speed, chair rise, etc.) and is safe for old and older adults to engage in (Olson et al., 2019).

Figure 1.



Note. Older adults working out [photograph], by S. Caldwell, 2018, (<https://www.alcoa.ca/the-necessity-of-exercise-for-older-people/>)

Site Description

Iridium Enterprises

- Start-up outpatient therapy & fitness center in Long Beach, CA.
- Target population: Adult & older adults
- Mission Statement:
 - "Our goal is to use the most up-to-date science to develop safe and effective therapy/fitness programs that will help us live longer, more independent, and with the highest quality of life possible."
- Possible services offered:
 - Occupational Therapy
 - Physical Therapy
 - Implementation of "Fundamentals Program"
 - Balance & Core Stability, Strength, Cardiovascular Fitness (Zone 2/Zone 5), Range of Motion, Power
 - ADL & IADL assessments with personalized fitness training

Summary of Needs Assessment

- Identified needs of site:
- Conduct primary market research (interviews, observations, surveys, etc.) to identify needs of potential clientele.
 - Develop a Fundamentals Program for adults and older adults to increase wellness and longevity.
 - Research & formulate an itemized equipment list, intake form, floor plan, and space requirements for potential business.

Figure 2.

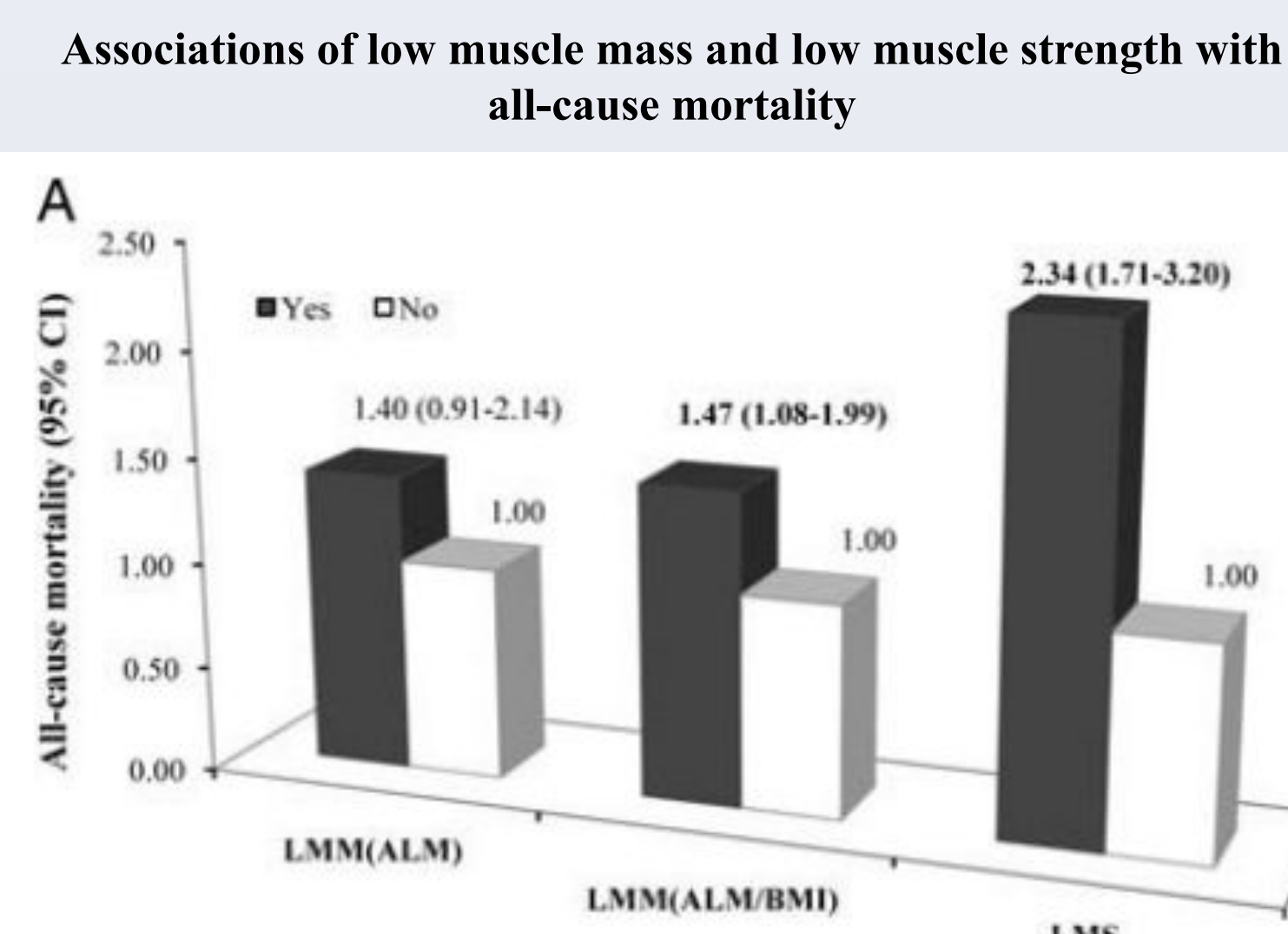


Note. Seniors using dumbbells [photograph], by Wavebreakmedia, 2016, (<https://www.istockphoto.com/photo/seniors-using-weights-gm614035024-106117401>)

Literature Review Summary

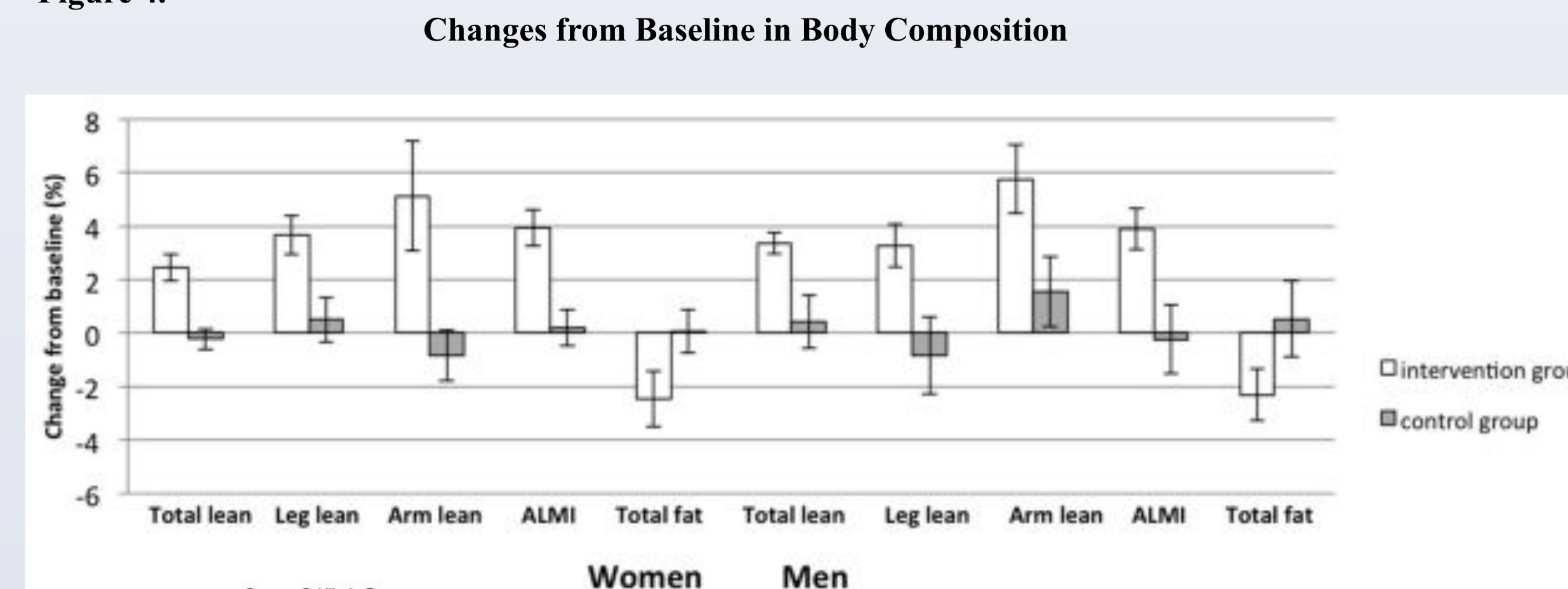
- In the fully adjusted models, it has been shown that all-cause mortality was significantly higher among individuals with low muscle strength (odds ratio, 2.34; 95% CI, 1.71–3.20), regardless of muscle mass (Li et al., 2018). The results of these associations with all-cause mortality are presented in Figure 3.
- Recent studies reported that muscle power exercises with lower loads and faster movement velocities improve Activities of Daily Living (ADL) performance and therefore may be superior compared to traditional progressive resistance training (Muehlbauer et al., 2012).
- Easy-to-use, functional resistance training programs effectively maintain functional strength and increased muscle mass in older adults with pre-sarcopenia (Vikberg et al., 2019). Figure 4 shows the increases in lean muscle mass across multiple parts of the body in addition to overall fat loss in women and males.

Figure 3.



Note. LMM=Low muscle mass; LMS=Low muscle strength; logistic regression models

Figure 4.



Note. Body composition changes from baseline in the intervention and control group for both men and women separately.

Capstone Project Description

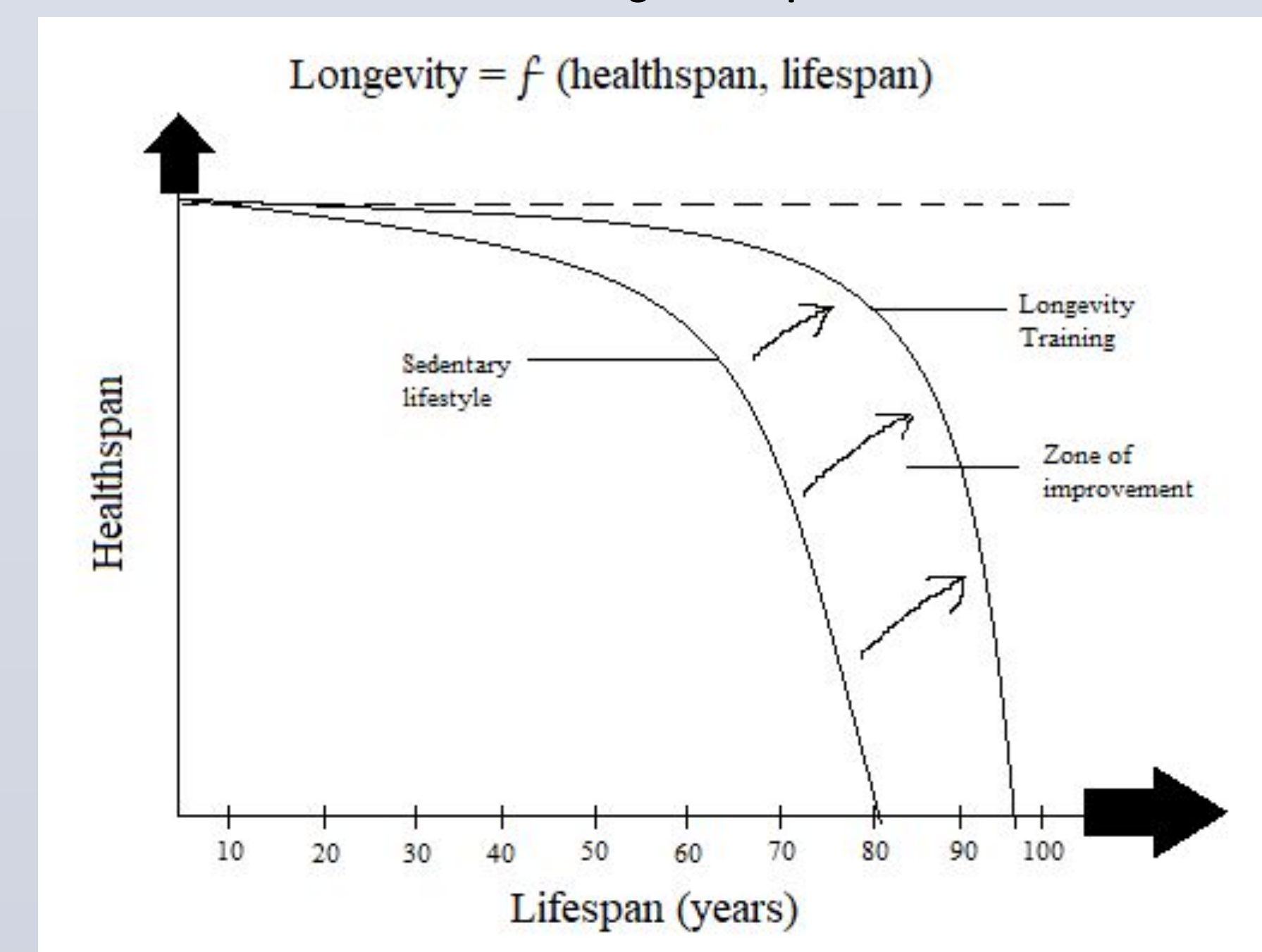
- Collaborated with mentor and Iridium Enterprises founder Dr. Aaron Green, PhD, who has extensive expertise in entrepreneurship, strategic planning, business development, and MedTech.
- Conducted primary market research to aid in the development of a combined Health & Wellness & Therapy center for adults who want to proactively improve their quality of life (QOL) and longevity.
- Interviewed students, professors, business owners, and several leaders in the industry.
- Developed an ADL assessment form, treatment, and fundamentals program/protocol for our prospective.
- Researched state/federal laws, policies, and regulations for proposed project.
- Researched equipment, space requirements, SBA Loan, floor plan, and lease opportunities.
- Developed a subscription based business model with a tiered payment system for more advanced trainers and clients.

Figure 5. Hierarchy of Longevity Training



Note. As we progress up this pyramid, we go from fundamental movement patterns to focusing on weighted and more complex exercises.

Figure 6. Fundamentals Program Graph



Note. By implementing longevity training, we can increase our zone of improvement and live longer and better.

Learning Objectives Achieved

- Completed primary market research to investigate adult and older adult needs related to longevity.
- Interviewed and spoke to several business leaders in the telehealth, health & fitness, and sports rehabilitation field.
- Developed a core Fundamentals Program for a potential business venture with Iridium Enterprises.
- Created evidence-based exercise programs to increase QOL, longevity, and ADL performance.

Figure 7. ADL Assessment Form

ADL Assessment Form						
1. Assessment						
ADL Assessment:						
#	Occupation (ADLs)	Rate of importance of listed activities from 0-5 (0 = not important, 5 = very important)	Self-rated performance 0-5 (0 = unable to do, 5 = very easy to complete)	Contraindications for movement Y/N, if Y, why?	Rate of importance of listed activities from 0-5 (0 = not important, 5 = very important)	Actual Performance (measured by Staff) (0 = not important, 5 = very important)
1	Bathing, showering					
2	Toileting and toilet hygiene					
3	Dressing					
4	Functional mobility					
5	Personal hygiene and grooming					
Occupations (IADLs)						
7	Care of Others					
8	Care of Pets					
9	Child rearing					

Note. Intake form to rate important ADL/IADLs and to assess which ones need improvement.

Implications for OT Practice

- In 2050, the population aged 65 and over is projected to be 83.7 million, almost double its estimated population of 43.1 million in 2012 (ACL, 2022). Implementing evidence-based therapeutic exercise programs will allow them to live longer with a higher QOL.
- Health and Wellness is a rapidly expanding practice area in OT. Developing exercise programs based around ADLs can improve patient outcomes.
- Decreasing all-cause mortality through our fundamentals program can decrease healthcare costs through prevention.
- Being a business owned and operated by an OT can inspire other OTs to be entrepreneurs.

REFERENCES & ACKNOWLEDGMENTS

Thank you to Dr. Aaron Green for taking the time out of his busy schedule to teach me how to start a business from the bottom up.

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References Available Upon Request