

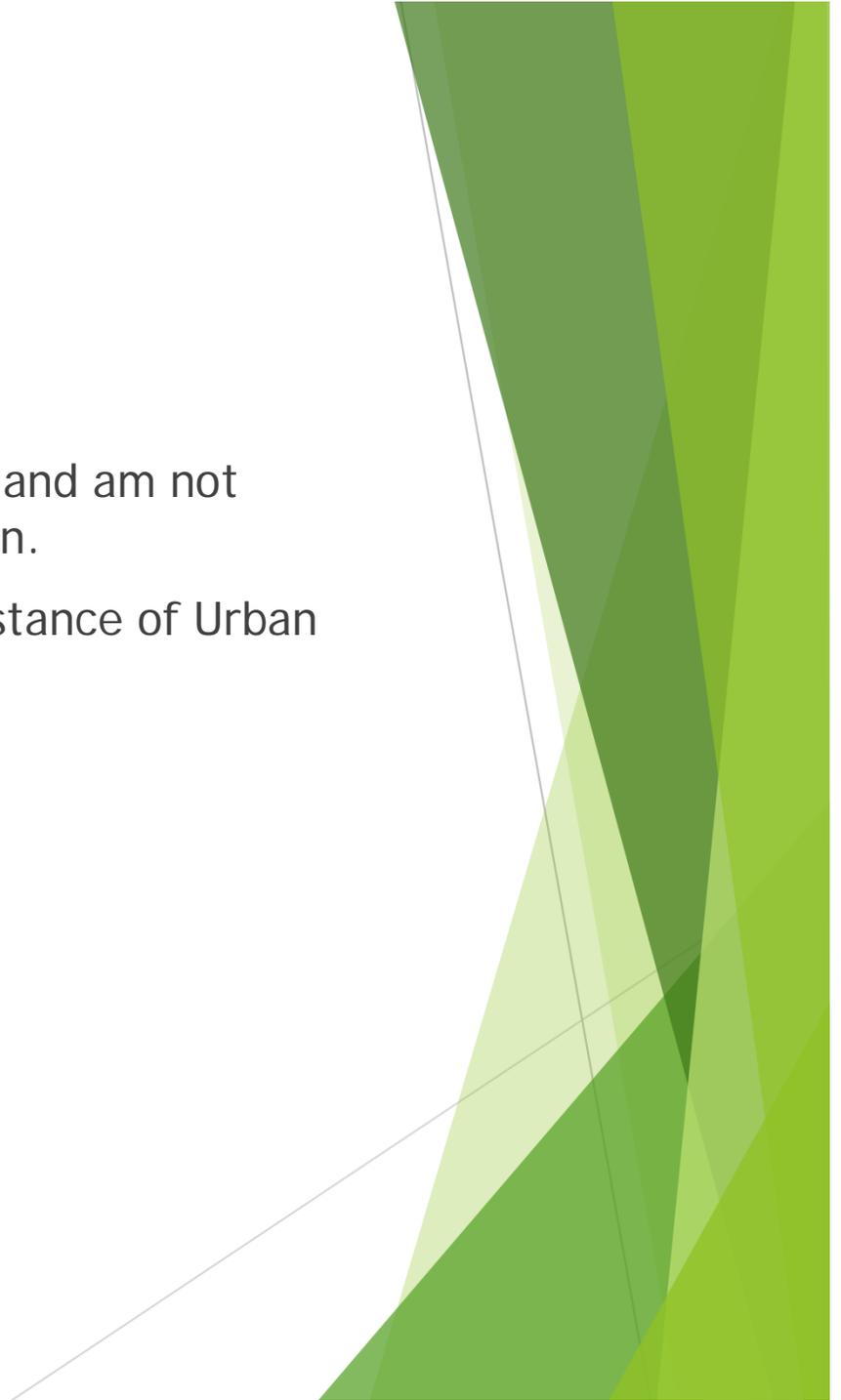


Diabetes and Nordic Walking

IOWA DIABETES SUMMIT - NOVEMBER 2019

Disclosures

- ▶ I have no financial conflicts to disclose and am not being compensated for this presentation.
- ▶ The slides were compiled with the assistance of Urban Poling.



Claudia Mariano

- ▶ Claudia Mariano graduated from the University of Toronto in 1986 with her Honours Bachelor of Science in Nursing. After working in medical-surgical nursing and public health nursing, she returned to U of T and obtained her Master of Science in Nursing in 1992.
- ▶ In 1999 she graduated from the Primary Care Nurse Practitioner Program, also from U of T. For over 20 years she has embraced primary care and chronic disease management while working in the Community Health Centre and Family Health Team sectors. While working at the West Durham Family Health in Pickering, Ontario for 10 years, Claudia spearheaded the Urban Pole Walking Program for patients as a way to facilitate patient self-management of chronic disease. The success of the program continues to this day and will be shared during this session. Claudia has also obtained her certificate in Intensive Smoking Cessation Intervention from the University of Toronto and was a trainer for the Ottawa Model for Smoking Cessation.
- ▶ Claudia is a past Board member and past President of the Nurse Practitioners' Association of Ontario and is currently their Manager of Practice and Policy. She is a past Board member of the Association of Family Health Teams of Ontario, current Adjunct Lecturer at the University of Toronto Lawrence S. Bloomberg Faculty of Nursing, and author/editor of "No One Left Behind: How Nurse Practitioners are Changing Canada's Health Care System". She also maintains a locum clinical practice.



Key Learning Objectives

- ▶ Overview of Nordic Walking
- ▶ Key Research Review
- ▶ Nordic Walking Techniques
- ▶ Diabetes & Nordic Walking Applications
- ▶ Program Implementation





Overview of Nordic Walking

What is Nordic Walking?

Nordic Walking is a growing fitness and wellness physical activity trend targeting *aerobic* + *strength* training by combining specialized poles with walking.



Nordic Walking = Cross-Country Skiing + Walking

A Video Tells a Thousand Words



What is Nordic Walking?

Nordic Walking technique is designed specifically to:



- ✓ Engage most muscles
- ✓ Increase caloric expenditure by 20-46%
- ✓ Target major core muscles
- ✓ Promote good posture, balance & stability
- ✓ Reduce impact on knee & hip joints

1 MILE of Nordic Walking = 1800 abdominal contractions!

The Power of Nordic Walking: An Aerobic & Strength Training Combination

▶ **AEROBIC (also known as cardiovascular benefits):**

- Stronger heart muscles and also muscles involved in breathing
- Lower resting heart rate and blood pressure, and overall improved oxygen delivery to cells in the body
- Improved mental health, including lower stress and incidence of depression, as well as increased cognitive ability
- Reduced risk of developing cardiovascular disease and type 2 diabetes, as well as other chronic conditions

▶ **STRENGTH (also known as resistance training benefits):**

- Improved strength and durability of muscles, bones and connective tissues (tendons and ligaments)
- Lower bone loss and increased bone density
- Improved function of joints and prevents injury



The Overall Benefits of Active Living with Nordic Walking

There are over 300 published research studies describing both the **physical** and **mental** health benefits of walking with poles vs. walking without them.

Regular physical activity, such as urban poling, provides these health benefits:

- Healthy weight loss/control
- Helps control blood glucose
- Lowers risk of CVD
- Enhances the immune system
- Improves sleep & provides more energy
- Promotes better social life
- Enhances self-esteem, mood & overall wellbeing

The background features abstract green geometric shapes. On the left, a solid green triangle points downwards. On the right, a complex composition of overlapping, semi-transparent green triangles and polygons in various shades of green is arranged. A thin, light grey line extends from the bottom left towards the right side of the composition.

Key Research Review

Research Supports Physical Benefits of Nordic Walking

With over 300+ independent research studies on the benefits of Nordic Walking, evidence clearly identify Nordic Walking, with the proper training, as a healthy mode of physical activity suited for primary and secondary prevention, as well as rehabilitation.

Nordic Walking offers proven beneficial effects on key health parameters, including:

- ↑ Caloric expenditure
- ↓ Body Weight
- ↓ Total Fat mass
- ↓ BMI & Waist circumference
- ↓ Lowers cholesterol & Triglycerides
- ↓ Level of perceived claudication pain



**Am J Prev Med 2013;44(1):76-84*

Research Supports Benefits Beyond the Physical of Nordic Walking

Benefits extend beyond physical:

- ↑ Social interaction
- ↑ Quality of life
- ↑ Exercise tolerance
- ↑ Personal exertion limits
- ↑ Self-Esteem



**Am J Prev Med 2013;44(1):76-84*

A Sample of Some Important Research Reviews

- ✓ **Higher VO₂ max and peak HR**
 - ▶ (Walter et al., 1996; Collins et al., 2005)
- ✓ **Lower resting HR**
 - ▶ (Chomiuk et al., 2013)
- ✓ **Lower resting BP**
 - ▶ (Collins et al., 2005, Figard-Farber et al., 2011; Chomiuk et al., 2013)
- ✓ **Improved blood lipid profile**
 - ▶ (Hagner et al., 2009)
- ✓ **Higher exercise tolerance and capacity**
 - ▶ (Kocur et al., 2009)

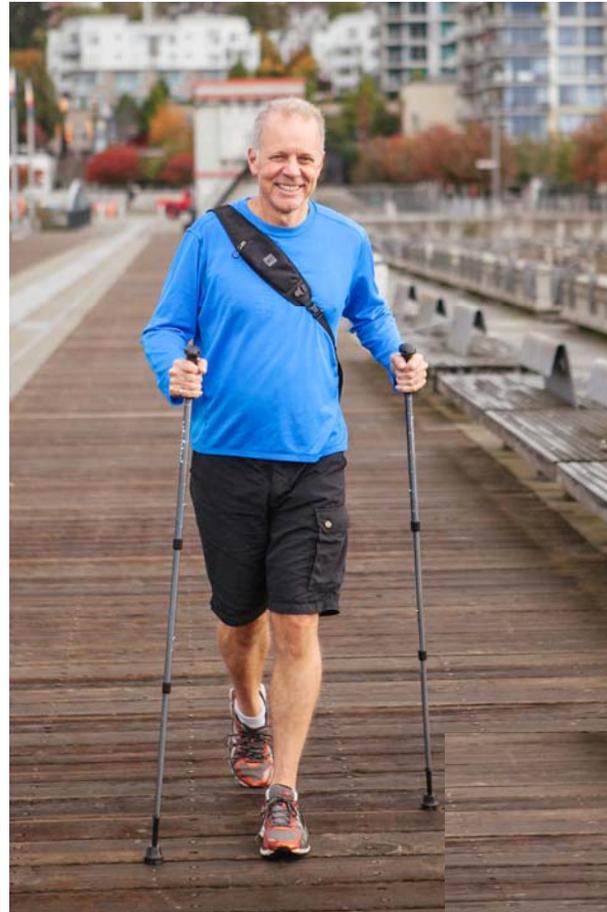


Nordic Walking Techniques

Nordic Walking Techniques



Traditional Nordic Walking Technique



Wellness Walking Technique

Traditional NW Technique



- ▶ Poles are used on the angle & designed to propel you forward
- ▶ Ideal for those who are **balanced** on their feet, do not have acute orthopedic injuries/conditions or chronic conditions which require them to off-load significant amounts of weight into the poles.

Wellness Walking Technique



- ▶ Poles are used perpendicular to the ground at all times.
- ▶ Ideal for those who have compromised balance due to age or chronic condition that effects balance (Parkinsons, MS, stroke) who are candidates for orthopedic surgery or who have had surgery.
- ▶ People within these categories should not be propelled they should be supported hence maintain the poles perpendicular to the ground at all times.
- ▶ The quality of the poles and their off-loading potential must be considered for these individuals in particular.

Compare & Contrast



- **Traditional Nordic Walking**
 - Forward walking position
 - Pole Position: Angled
 - Elbows: Extended with drive

- **Wellness Nordic Walking**
 - More upright
 - Pole Position : Vertical
 - Elbow close to 90 degrees

Not Just for Walking! Stretch, Aerobics, Standing Exercises, Chair Exercises & More!



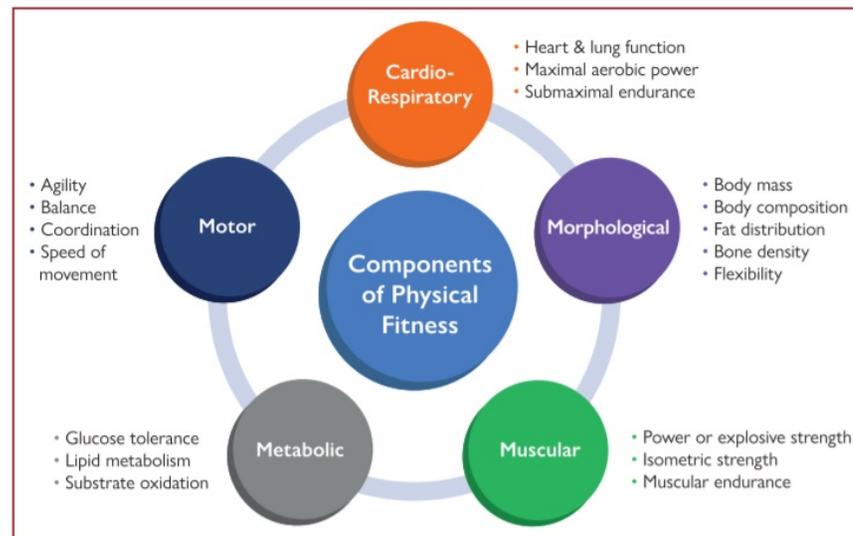


The background features abstract, overlapping green geometric shapes. On the left, a solid green shape tapers to a point. On the right, a complex composition of semi-transparent green polygons in various shades (from light lime to dark forest green) overlaps, creating a layered effect. A thin white line also extends from the bottom right towards the center.

Diabetes & Nordic Walking Applications

Health-related benefits of Nordic Walking involve:

- ▶ Cardiorespiratory endurance
- ▶ Muscular strength & endurance
- ▶ Body composition
- ▶ Flexibility



- ▶ This helps you withstand physical challenges and protects you from diseases, such as type 2 diabetes!

What does Nordic Walking have to do with the *Metabolic Syndrome*?

- ▶ **High fasting blood glucose** levels (5.6 mmol/L or higher)
- ▶ **High blood pressure** (130/85 mm Hg or higher)
- ▶ **High level of triglycerides**, a type of fat in your blood (1.7 mmol/L or higher)
- ▶ **Low levels of HDL**, the “good” blood cholesterol (lower than 1.0 mmol/L in men or 1.3 mmol/L in women)
- ▶ **Abdominal obesity or too much fat around your waist** [a waist circumference of greater than 102 cm (40 inches) in men and greater than 88 cm (35 inches) in women]

What does Nordic Walking have to do with the *Metabolic Syndrome*?

Metabolic Syndrome

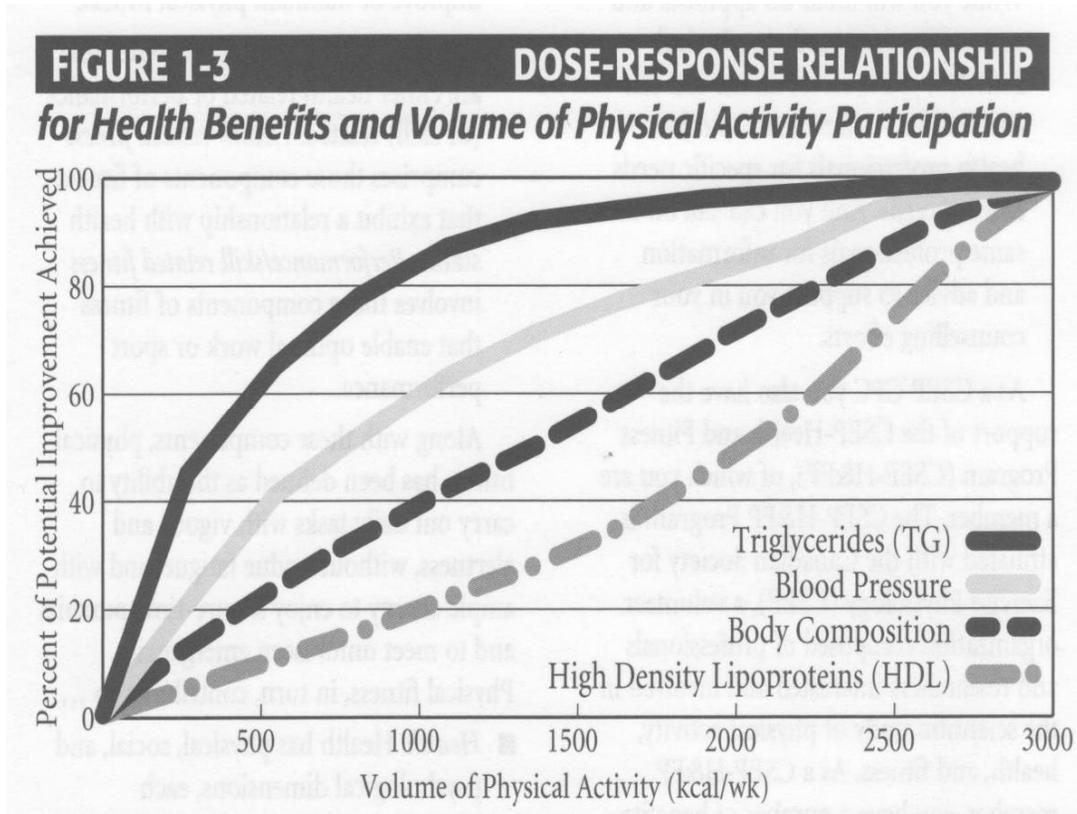
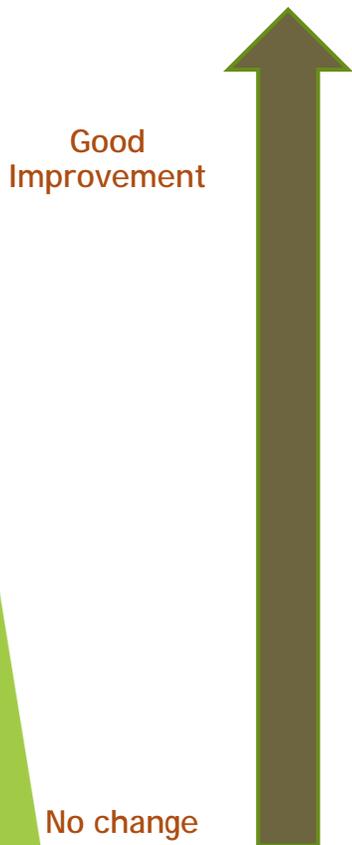
- ▶ Type 2 Diabetes
- ▶ Heart disease
- ▶ Obesity

Lifestyle Risk Factors (2 Broad Categories)

- ▶ Non-modifiable;
 - ▶ Member of high-risk group
 - ▶ Genetics
- ▶ Modifiable
 - ▶ Life style changes



What does Nordic Walking have to do with the *Metabolic Syndrome*?



VOLUME OF PHYSICAL ACTIVITY PER WEEK (kcal)

How does Nordic Walking Promote Glucose Control?

The Power of Physical Activity

1. Exercising muscles take in glucose *without* insulin, *lowering* blood glucose (Acute)
2. Cells become more sensitive to insulin, and helps to stabilize blood glucose levels 24h-72h effect (Chronic)
3. Aerobic vs Anaerobic Exercise: “power combination;” A1C levels and other diabetes-related complications and impact on lowering blood pressure

How does Nordic Walking Promote Glucose Control?

- ▶ The body's response to exercise is *localized to the muscles that you are exercising*.
- ▶ The more muscles working, the better!
- ▶ Improved body composition (healthy weight, blood glucose control). Lowers fat mass, (Gram, 2010)
- ▶ Lowers intermittent claudication

Nearly all the muscles engage simultaneously when you Nordic Walk!





“Purchasing Nordic Walking Poles is one of the best decisions I have made recently.

The feeling of finally regaining control over my health is something I can't find words to express.”

▶ - Janet (type 2 diabetes)



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Program Implementation

The Wellness Continuum

- ▶ **Nordic Walking** has the **POTENTIAL** to **SLOW** disease onset & progression
- ▶ The most successful long-term programs involve combinations of diet, exercise, and behavior modification

(Ruderman et al. Eds. Handbook of Exercise in Diabetes American Diabetes Association; 2002. p. 355-64).



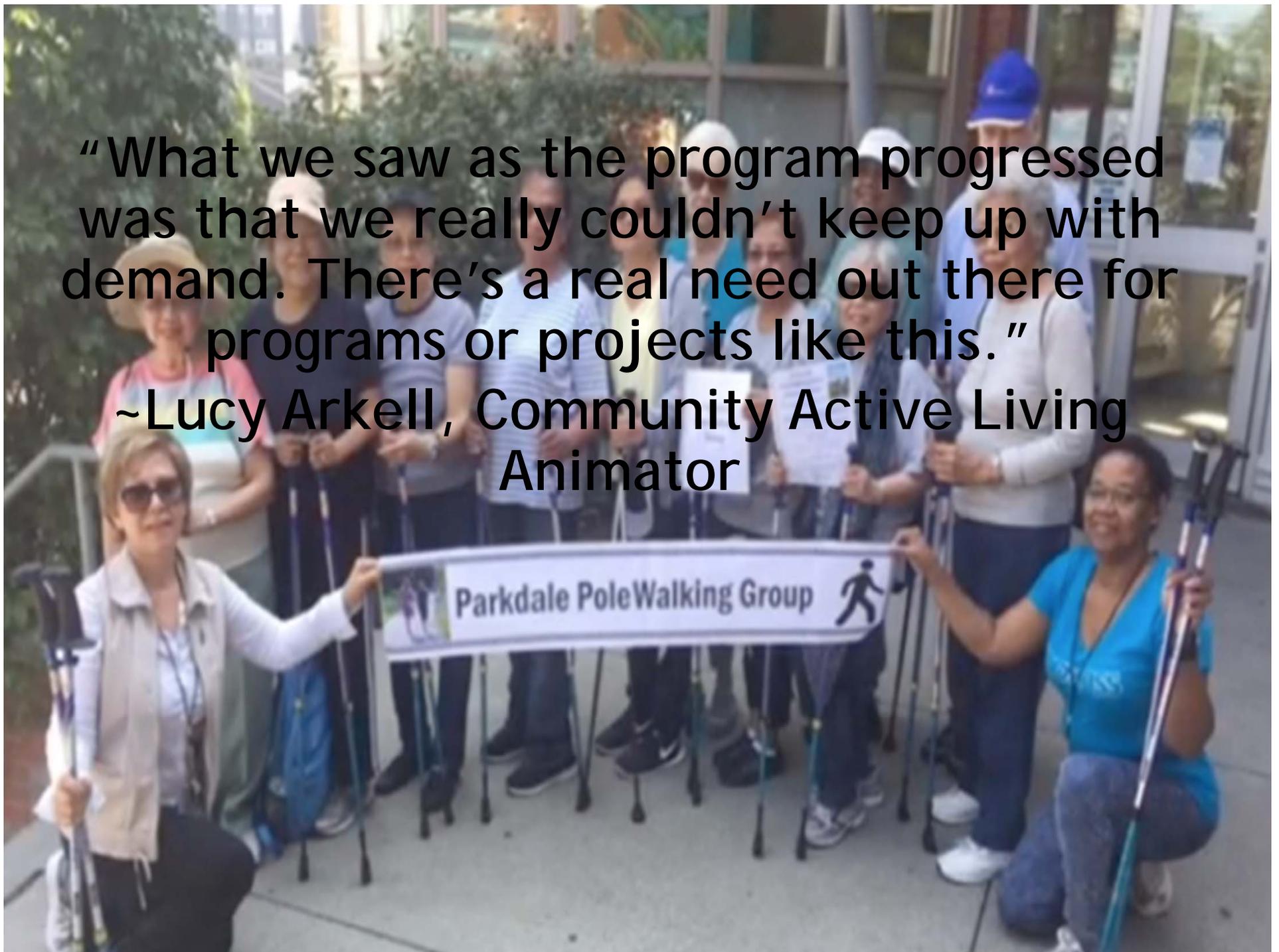
Community walking programs

- ❑ Activity bridges generational gap
- ❑ All weather, all terrain activity



“What we saw as the program progressed was that we really couldn’t keep up with demand. There’s a real need out there for programs or projects like this.”

~Lucy Arkell, Community Active Living Animator



Program Runs Year Round: All Seasons & Terrains!

- ▶ *"Teaching Nordic Walking on various surfaces - asphalt, concrete, trails, sand and turf - has been enlightening and a great experience. I have lost weight and gained energy. It's now beginning to feel unnatural not to have the poles in my hands when walking!"*

Bev Burnham, Pilates & Nordic Walking Instructor - Ontario, Canada





Spiritual & Environmental Connection

- ▶ Walking & Talking
- ▶ Destination and/or Goal-Based Activity
- ▶ This activity improves motivation to exercise

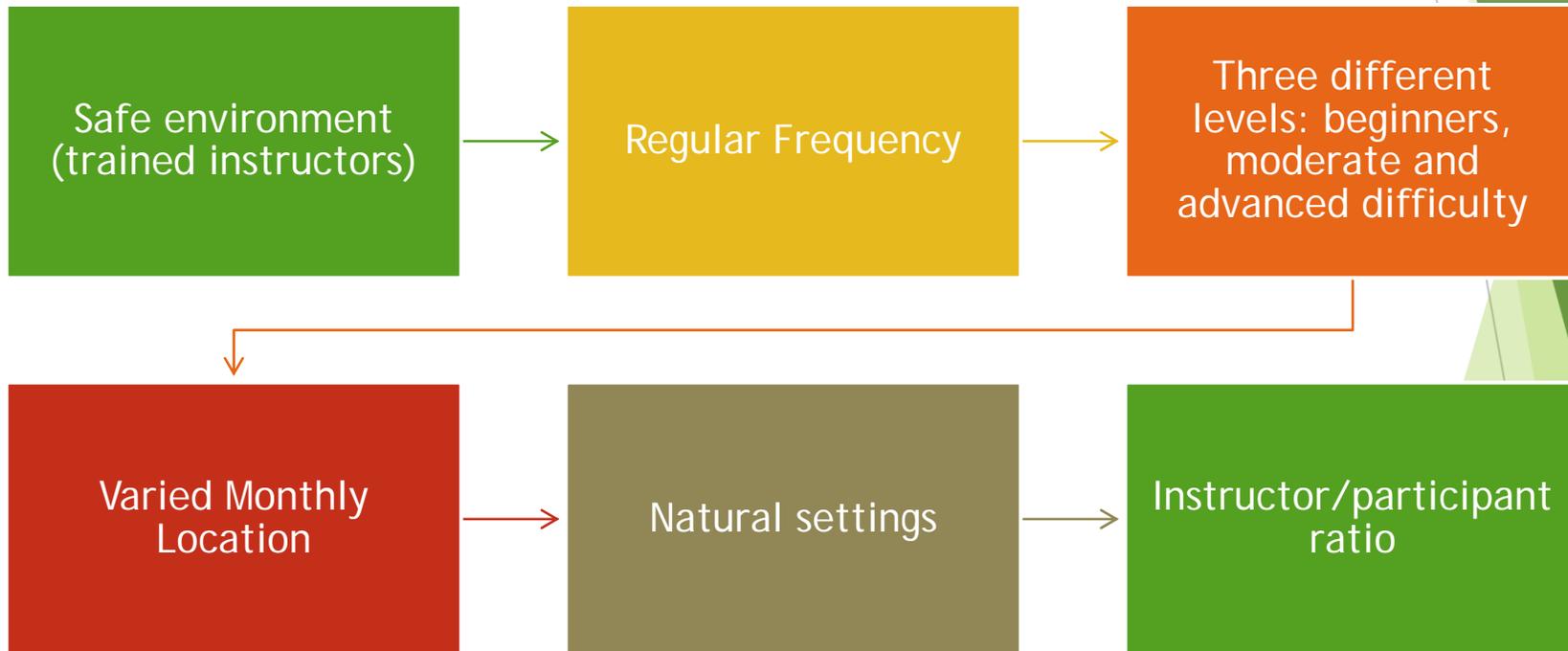
Those who join the program – stick with the program!

- ▶ Research supports that adherence rates to poling programs are higher versus traditional walking programs.
- ▶ The ease of transition from practice to home is also more smooth & again, adherence rates in maintaining the program are also high.

Why are Primary Care Teams, Diabetes Education Centers, Community Centers and Mental Health Groups Embracing Nordic Walking Programs?

- ▶ It is an activity that is conducive to **all ages and stages** - the options of mobility/balance programs and fitness programs allow for this
- ▶ It **bridges the generational gap** - families can participate together
- ▶ **Education is offered & supported** by accrediting associations like the American College of Sports Medicine, ACE & Functional Aging Institute.
- ▶ It is **easily adopted** in terms of the train the trainer approach
- ▶ **Wholesale prices** are available for centers which make the start-up fees to establish a program manageable
- ▶ You can find **resource materials** to support centers & their participants

Success Factors



Establish Referral Form



Ladysmith Community Health Centre

Nordic Walking Group

REFERRAL

Overview

The "Urban Poling Group" program runs once a week for 8 weeks. It is for individuals who want to improve a current low activity tolerance (e.g. those recovering from injuries or illness) and/or people who need to improve stability and balance when walking. It starts with a gentle warm up, followed by a 10 minute walk and a cool down. This is slowly progressed depending on the tolerance of the group members.

The program is free and poles are provided for free to use for the duration of the program.

Prior to the group, clients have an individual assessment by Sue Colbourne OT. If they have significant issues with their gait or if they are using a walker, Sue will arrange for a physio consult to determine if they are suitable for the group or if they require physiotherapy intervention first (e.g. participation in the Falls Prevention Balance class).

The group is designed to be very interactive and has an educational component covering topics such as benefits of exercise (physical, cognitive, emotional) and goal setting, and group problem solving for common barriers to exercise (e.g. overcoming motivational issues).

Please ensure you have reviewed the program overview with the client and that he/she is interested in attending all sessions

Referral Date: _____

Referral Source (name & phone): _____

Client Name: _____

MRN: _____

DOB: _____

Phone Number: _____

Alternate Contact Person and Phone Number: _____

Family Physician: _____

Pertinent Medical

Information: _____

Gait Aids used: None Cane 2 wheeled walker 4 wheeled walker
 Urban Poles

Please send referrals to Sue Colbourne, LCHC OT. Fax: 250-740-2689. The client will be placed on a waiting list and will be contacted when there is space available. The group is offered 3 times per year.



Initial Evaluation Procedure

Ladysmith Community Health Centre
Activator Assessment Form

Date	Contacted client today following referral from:	Signature
	Current Status: _____ _____	
	Purpose of Activator Assessment explained: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Client consented to come in for assessment: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Current Walking Aid: _____	
	Has client fallen in the last 12 months?: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Post fall interventions: _____	
	Any health related concerns that may restrict activity: _____	
	Grip strength: _____	
	Vision: _____	
	Pain: _____	
	Exercise tolerance: _____	
	Functional ROM for poling: _____	
	Cognitive concerns: _____	
	Type of pole recommended: _____	
	Type of tip recommended: _____	
	Follow up (if any): _____	

Pre & Post Measure Evaluation

Pre-Evaluation Measures:

- Physical Activity Questionnaire

Post-Evaluation Measures:

- Physical Activity Questionnaire
- Evaluation Form

Evaluation Form
Nordic Walking Group
Winter 2017

Thank you for attending this Group. Your opinion is important to us. All responses will be summarized and used for further planning purposes.

Please circle only ONE number for each question.

	Strongly Disagree			Strongly Agree	
1. I received proper instruction on how to safely use Urban poles	1	2	3	4	5
2. I had opportunities to make suggestions and ask questions	1	2	3	4	5
3. I was encouraged to take rest breaks when needed	1	2	3	4	5
3. I enjoyed the group	1	2	3	4	5

The length of time spent on warm up exercises was (circle): too short too long just right

The length of time spent walking with the poles was (circle): too short too long just right

4. What did you really like about the Urban Poling group? What benefits have you noticed (if any) in your daily life?

5. How ~~could the Urban Poling group be improved?~~

Would you recommend this group to others: (circle) yes no

Good to Great - Tips from the Best

- ▶ It doesn't have to be perfect...just start.. get a small group of friends, colleagues, patients or like minded people together
- ▶ Offer "Just try it clinics first" for first timers!
- ▶ Start small, offer a group for 10 weeks, so people don't need to commit their entire lives to poling..
- ▶ Change up your walking routes often!
- ▶ Be safe!
- ▶ Have fun!

A Final Word from Family Health Team



Couchiching Family Health Team
Working together. Enhancing care.

What health conditions are being referred to UP walking? There are a variety of health conditions that have been benefiting from the UP Walking Program. Most often patients have multiple conditions that are improved through physical activity. We mostly have those looking for improved gait and balance. Typically participant have deconditioning due to Osteoarthritis, fibromyalgia, COPD, type 2 DM. I have used Urban Poles with assisting in improved gait and endurance with those with neuropathy of the feet.

Our current group is our largest to date. We have 18 people in the group. The age range in the group is 21-87 years of age. We have 5 within the group that are at a high risk of falls. Their distance is limited and the route has a variety of benches. While the R. Kinesiologist walks with the slower paced group, the volunteer leads the rest at a faster pace and longer route. Each person can walk at their own chosen speed, there is no pressure to keep up with the group.

Up Pole Walking is very useful for our Family Health Team as it is cost efficient and easily accessible. Urban Poling is appropriate for a variety of health conditions in a group setting proving to be time efficient for Health Educator. I would recommend Urban Pole Walking as an addition to community and family health care teams.

Author: Tricia Buell-Malcolm R.Kin

Health Educator/Promoter

Couchiching Family Health Care Team

Broad Program & Patient Applicability beyond Diabetes:

- ▶ Post Surgery Hip and Knee
- ▶ Factors related to Fall Prevention
- ▶ Parkinson's, MS
- ▶ Post Stroke
- ▶ Brain Injury
- ▶ Arthritis - OA, OP
- ▶ Chronic Pain
- ▶ Homecare
- ▶ Geriatric, Retirement & LTC

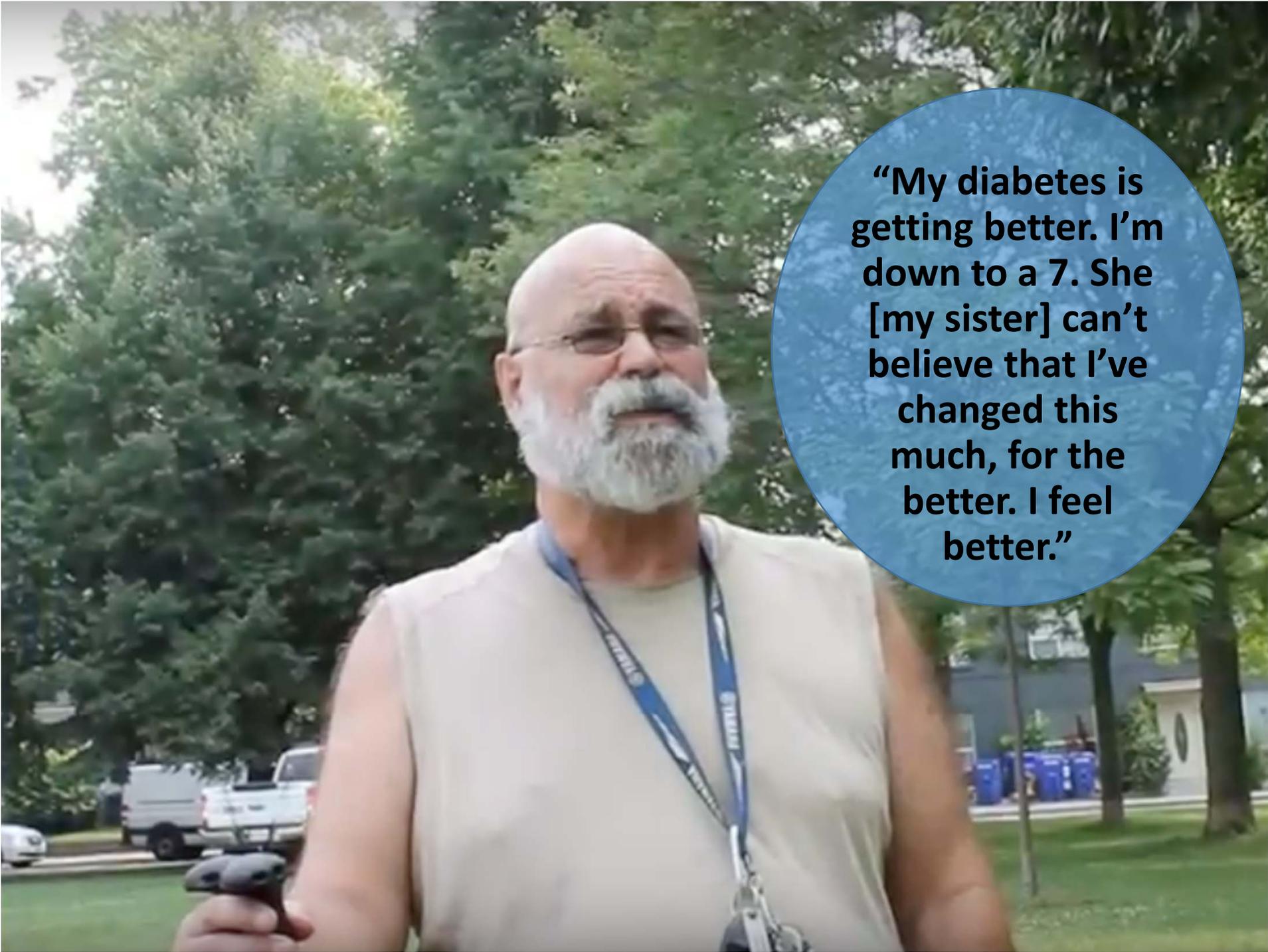
Ability vs. Disability



Some of the Top Reasons Patients Said They Loved Nordic Walking!

- ▶ Weight Management
- ▶ Reduced Waist Size
- ▶ Improved Glucose Management
- ▶ Lower BMI
- ▶ Muscle Conditioning
- ▶ Improved Cardiovascular Health
- ▶ Increased Flexibility
- ▶ Stress Management
- ▶ Improved Clarity
- ▶ Decreased Anxiety & Anger
- ▶ Reduced fatigue





“My diabetes is getting better. I’m down to a 7. She [my sister] can’t believe that I’ve changed this much, for the better. I feel better.”

Thank You!

