

Disclosure of Commercial Interests


Cate Reade, MS, RD,
ACE-Certified Senior Fitness Specialist

- CEO of Resistance Dynamics
- Inventor of the MoveMor™ Mobility Trainer
- Helping seniors regain strength, balance, mobility and more to live independently and reduce fall risk.

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Your Strongest Community Differentiator: Wellness Programming



Cate Reade, MS, RD,
ACE-Certified Senior Fitness Specialist
CEO/Inventor

November 18, 2017

Good Morning Moves




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Health & Wellness

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. *—World Health Organization*

Wellness
Making consistent lifestyle choices for your best possible health & well-being.



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Pandemic of Chronic Disease

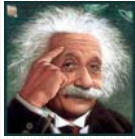
Chronic disease is now the leading cause of death & disability worldwide. *—World Health Organization*

Largely preventable through lifestyle choices

- Inflammation as the root cause
- Health is a lifestyle choice
- Genes & epigenetics

Stand Out from the Crowd

- Create a Culture of Health
- Purposeful Programming



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Four Pillars of Health



Nutrition

- Food is medicine
- Water

Movement

- Exercise is medicine
- Be in Motion

Sleep

- Body heals & grows
- Detox


Stress

- Chronic stress is a killer – damages the body and brain
- Causes or contributes to 95% of all disease



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7 Dimensions of Wellness



Functional fitness programs can build stronger bodies, brains and relationships

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Purposeful Programming

- Resident-Centered**
 - Fear of Falling
 - Losing Cognition
 - Isolation & Depression
- Strengthen Dimensions of Wellness**
 - Physical
 - Mental/Emotional
 - Social
- Fitness Programming**
 - Group sessions designed to improve function

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Functional Decline or Health



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#1: Social Connections

The Roseto Effect

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**Best Practices:
Purposeful Programming**

- Resident Participation & Engagement
- Credentialed fitness professionals
- Passion
- Team
- Creative brainstorming
- Variety of Fitness Classes
 - Functional Strength
 - Balance
 - Chair Yoga
 - Aquatics
 - Go Green
 - MoveMor™ Mobility
- Evidence-based, innovative products & programs
- Perform Assessments
- Track Metrics
- Marketing
- Thriving, growing communities
 - Seabury, Cindy Senk
 - White Horse Village, Todd Canfield
 - La Loma Village, Kari Curry
 - Someren Glen, Beth Corn

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Root Cause of Falls

Weak legs & poor balance

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The Culprits

Sarcopenia & Inactivity



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Sarcopenia

Age-related loss of muscle

- > Muscles shrink
- > Nervous and sensory systems fade away

RESULTS

- > Inactivity speeds up loss of strength, balance and function
- > Reduced ability to perform ADLs and live independently
- > Less activity and life engagement
- > Isolation & depression
- > Higher falls risk



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Sarcopenia Solution

Active Lifestyle & Resistance Training

Improve muscular **strength** by moving limbs against resistance.


- > Body weight
- > Machines
- > Free weights
- > Elastic tubing/bands

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Balance Systems



- Vision
- Vestibular system
- Somatosensory system



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Mobility & Balance

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HARDWARE	SOFTWARE
<p>Bones</p> <p>Joints</p> <p>Muscles</p> <p>Connective Tissue</p> 	<p>Nervous System Central & Peripheral</p> <p>Sensory System:</p> <p>Proprioception</p> <ul style="list-style-type: none">> Sixth Sense> Body awareness> Sense & respond> Joints, connective tissue & muscles> Balance, coordination & agility 

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Experience Proprioception

<p style="color: #27ae60; font-weight: bold;">Body Awareness</p> 	<p style="color: #27ae60; font-weight: bold;">Sense & Respond</p> 
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Functional Programming: Mobility Training

Improve strength & balance

- A specialized form of resistance training
- Move joints through a full range of motion
- Relieve pain – arthritis
- Restore joint function
- Strengthen muscles, joints and neural systems

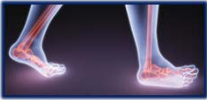
RESULTS:

- Better mobility
- Greater independence
- Stronger body-brain communication
- Reduced fear and lower fall risk



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Foundation for Mobility & Balance



Feet & Ankles


- Lush with proprioceptors
- Where you are and what's going on under your feet
- Bossy ankles
- Essential for postural and balance control

Strong, flexible ankles can best sense and respond to the environment.



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Ankle Strength & Flexibility



- Ankle flexibility is essential for posture, balance and functional ability in older adults. (Spink et al., 2011)
- Greatest loss of strength in dorsi- & plantar flexion ~ 40 y.o. (ACSM)
- Dorsiflexion declines by as much as 50% in women and 35% in men between the ages of 55-85 and are correlated with a higher falls risk. (Shumway-Cook and Woolacott, 2012)
- Programs that improve the strength and flexibility of the ankles and feet may help improve mobility and reduce the chance of falling. (Manz et al., 2005)


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Key Moves & Muscles Affecting Balance

- Range of motion ankles and hips

Ankle:

- Dorsiflexion (lift toes)
- Plantar flexion (lift heels)
- Inversion & eversion (toes in & out)




- Knee extensors & flexors (quadriceps and hamstrings)
- Hip abductors and adductors

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Exercise & Cognition

Chief way to modify disease


- Systemic Effects
- Metabolic Health
- Blood Flow
- Growth Factors
- Brain-Derived Neurotrophic Factor
- Brain Chemicals
- Brain and nervous system love novelty



* Senses are the Royal Road to the Brain

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Exercise & Cognition




- Older adults who rarely exercise have a 50% higher risk for developing dementia (Tan et al., 2016)
- Exercise training increases fitness, physical function, cognitive function and positive behavior in people with dementia and other cognitive impairments. (Hejn et al., 2004)

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Nutrition & Cognition

Standard American Diet: Low fat, high carbohydrate diet

- Flawed Science
- Processed Carbs & Sugar: radically reduce or eliminate
- High blood sugar- 50% increased risk of Alzheimer's
- Inflammation: Root cause of chronic disease
- Alzheimer's: Type 3 diabetes
 - Diabetes – 400% increased risk




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Brain Food

Fat, Fiber & Protein


Ketogenic Diet

- Healthy fats
- Colorful Vegetables
- High Quality Protein
- Stable blood sugar
- Anti-inflammatory
- Microbiome
- Intermittent Fasting



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Body & Brain are Plastic



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Neuroplasticity

- Ability of brain to change throughout life
- Strengthen different patterns in brain
- Neurogenesis in memory center



Physical & Cognitive Engagement

- Movement & BDNF
- Lifelong Learner
- Mental Imagery
- Positive Thinking



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"I have been working out for six months, but all my gains have been in cognitive function."

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By Kimmberly Higgins from The New Yorker
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Strengthen Body & Brain Exercise Rx

Resistance

Mobility Training

10-20 min, 1-3X/week

Purpose: Regain strength & balance

- Reduce fall risk
- Live independently
- Perform ADL
- Novel activity stimulates body & brain
- Group sessions – socialization

Aerobics

Be in Motion: Walk, swim, dance...

20 min / 3-7 days a week

Purpose: Cardiovascular health

High Intensity Interval Training (HIIT)

1-20 min/week, 1-3X/week

- Higher intensity & shorter times
- Push body to personal threshold
- 30 - 40 - 60 sec intervals, recover at lower intensity
- Adapt and get stronger – muscles & brain
- Metabolism benefits

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Mobility Linked to Independence

Mobility - the ability to move
Strength - exert force, withstand stress/strain


- **Power** - use strength quickly
- **Endurance** - use low level strength over longer time

Flexibility - the ability to move joints through a full ROM



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Training Principles



- **Individuality** – customize based on abilities and needs
- **Progressive Overload** – systematic small adjustments
 - Intensity
 - Volume: repetitions, sets, time, rest
 - Frequency
- **Neuromuscular Specificity**
 - Specific adaptation to imposed demand (SAID)
- **Periodization** – cyclical and phasic adjustments
- **Reversibility** – overtraining and inactivity yield regression

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Training Mobility

Phase	Purpose	How To
1. Strength	Foundation of all function	Slow & controlled movement through a pain-free range of motion
2. Joint Mobility	Move better, enhance gait, balance	Slow-moderate pace through full, pain-free range of motion
3. Joint Stability	Joint strength, control and balance	Slow-moderate pace, intervals of 3-10 sec holds at various joint positions
4. Power	Quicker reflexes, dynamic balance, enhance daily activities, reduce falls	High-speed intervals for 5-30 sec with low-intensity recovery as needed
5. Endurance	Walk, move and stand longer, fall less	Higher repetitions of light intensity for longer periods of time.

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Steps to Assess & Address



- 1. Buy In**
 - > Staff & residents
 - > Identify champions & co-champions
 - > Team coordination
- 2. Interview & Screening**
 - > Exercise Assessment and Screening for You (EASY) ~ Resnick et al 2007
 - > www.EasyForYou.info
 - > Health History
 - > Medical Issues
 - > Training Goals
- 3. Functional Assessments**
 - > Move-in & every 6-12 months
 - > Pre- & Post-Training



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Steps to Assess & Address

- 4. Training**
 - > Consistent performance
 - > Progressive
 - > Relate it to goals, function & ADLs
- 5. Reassess**
 - > 12 weeks
 - > Program effectiveness
 - > Progress is motivating
- 6. Share Results**
 - > Residents, families, community, healthcare and marketing team
 - > Celebrate culture of wellness
 - > Validate expense of equipment & programming with outcomes
 - > Community differentiator

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MoveMor™ Assessments & Outcomes

Over ten clinical studies using MoveMor™ 10-20 minutes, 1-2X/week for 12 weeks or less continue to prove:

- **Better Balance**
 - BIODEX Falls Risk Test
 - Reduced TUG
- **Greater Ankle Flexibility**
 - Goniometer
- **Reduced ADL scores**
 - MOS 3.0
- **Increased Strength**
 - Manual Muscle Testing
 - Quads, hip flexors, ant. Tib
 - Chair Stand
- **Improved Continence**
 - Self-reported
- **Potential Falls Reduction**
 - Falls prior & during intervention
 - Reduced fear of falling

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Assessments

- **Move in and every 6-12 months**
 - Physical Function: Senior Fitness Test (SFT)
 - Cognitive Function: Self-Administered Gerocognitive Examination (SAGE test) - potentially identify the warning signs of Alzheimer's disease and dementia in its early stages.
- **Exercise intervention: 2-3 functional assessments**
 - Pre- & Post-exercise
 - Cognition: Stroop Test
- **SFT**
 - Simple, easy and time-efficient
 - Compare to peers
 - Personal improvement
 - Motivating
- **Celebrate & Share**

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Assess for Resident Success

Balance & Falls Risk

Berg Balance Scale

- 14-item scale measuring balance and falls risk

Tinetti Performance Oriented Mobility Assessment (POMA)

- Task-oriented test to detect gait problems

Timed Up & Go

- Screen individuals prone to falls

Physical Function

Senior Fitness Test

- Simple, reliable battery of 7 tests
- Normative data to compare according to age group

Fear of Falling




Falls Efficacy Scale

- 10-item rating scale to assess confidence in performing daily activities without falling

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Senior Fitness Test

- **30-Second Chair Stand:** Lower body strength
- **Arm Curl:** Upper body strength
- **6-Minute Walk:** Aerobic endurance
 - **2-Minute Step Test:** Aerobic endurance
- **Chair Sit & Reach:** Lower body flexibility
- **Back Scratch:** Upper body flexibility
- **8' TUG:** Lower body strength, dynamic balance & agility


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Instructor as Facilitator

Starring Role in Community

Schedule tours during class times

- Regular resident engagement
- Strong, trusted relationship
- Stimulate conversation
- Relationship builder
- Feels good!
- Create an experience
- Class themes
- Engage senses



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Create an Experience

Engage the Senses

- Conversations
- Pictures
- Words
- Themes
- Aromatherapy



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Creating the Experience

- Inflammation as the root cause of most disease
- Lifestyle Choices (Edwards, T., 2005)
- Seven emotions to decrease inflammation (Murray M., 2016)

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Love



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Compassion



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Contentment



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Joy



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Pride



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Amusement



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AWE



Class themes: Awe experiences


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The Bottom Line

Purposeful Programming Benefits

Residents: Stronger, more mobile, happier, healthier, more independent and less likely to fall.
Longer length of stay and less movement through the continuum of care.



Staff: Require less care, lighter workload.



Community: Higher occupancy and resident satisfaction means lower marketing costs and higher revenues.

- Participation in wellness programming: two years longer in IL & AL; one year longer in memory care. (ICAA/ProManus Benchmark Study Nov 2015)

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Recap



- Purposeful programming
- 4 Pillars of Health & 7 Dimensions of Wellness
- Functional Fitness: address fall risk, brain health and socialization
- Credentialed fitness staff
- Resident engagement & participation
- Variety of innovative & creative programs and equipment
- Assess program effectiveness
- Track metrics
- Communicate outcomes with resident, family, healthcare & marketing teams and **stand out from the crowd!**
- **It's smart business.**



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Questions & Answers



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Thank You



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