Application of Frailty and Falls Screening And Interventions

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About the Onondaga Step Up To Prevent Falls Coalition

Members

- The Onondaga County Step Up To Stop Falls Coalition
  - Core Coalition
    - Onondaga County Department of Aging and Youth
    - The Salvation Army Syracuse Area
    - Aurora of Central New York
    - Visiting Nurses Association of Central New York
    - St. Camillus Health and Rehabilitation Center
  - Extended Partners
    - St. Joseph's Hospital
    - SUNY Upstate Medical University
    - Loretto Health Support, Inc.
    - PACE, CNY

Mission - Vision – Target

- **MISSION STATEMENT**
  - The Onondaga County Step Up to Stop Falls Coalition is a diverse group of organizations whose mission is to support healthy aging by measurably reducing the incidence of falls, related injuries and resulting mortality among individuals age 60 years and above living in the community.
- **VISION STATEMENT**
  - The Onondaga County Step Up to Falls Coalition intends to establish our community as a place where falls and fall-related injuries in older adults are lower than other counties in New York State, and create a sustainable and replicable model for other communities to follow.
- **TARGET POPULATION**
  - Individuals age 60 years and above, including those who have limited or no access to community-based falls prevention programs. This will include, but is not limited to: persons with vision and/or hearing loss, rural dwellers, persons with developmental disabilities and persons with limited English proficiency, low literacy and low income.

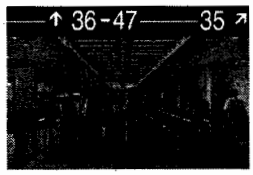
Measure of Success

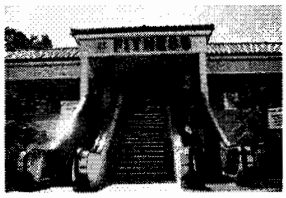
- **Professional Practice Change:** Professionals working with adults age 60 and older will demonstrate a significant increase in their working knowledge of falls prevention methods through specific, standardized and culturally competent approaches that are measurable and sustainable.
- **Behavioral Practice Change:** Adults age 60 and older living in the community will demonstrate a significant decrease in the fear of falling and actual instances of falls through a coordinated approach to intervention and assessment that is replicable and adaptable to the individual and /or group circumstance.
- **Public Information:** Adults of any age living in Onondaga County will be educated on the importance of falls prevention activities through a social marketing campaign that delivers targeted and culturally competent messages. This campaign will shift the mindset of when and how to delay the chance of falls and lessen the fear of falling.

Frailty and Falls

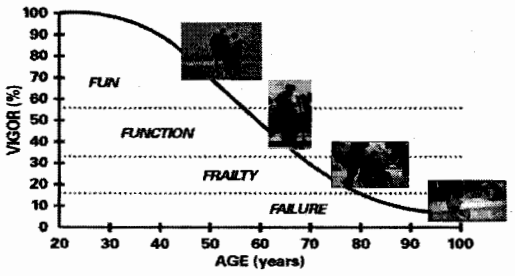
- Frailty is the pathway to disability and falls
- Intervention for Treatment and Prevention – Physical Activity and Exercise
- GOAL – Prevent Frailty

Technological Changes and Inactivity



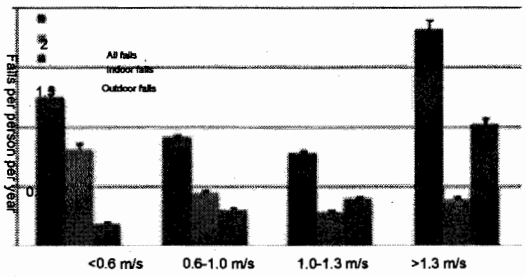


Slippery Slope of Aging – Aging Changes



Note
FUNCTION becomes FRAIL
~30-40%

Non-linear Relationship Btwn Gait Speed and Falls



Functional Assessment

Fall-Related Efficacy

- Essentially, self-confidence
  - Defined as "confidence at avoiding falls"
  - Measurable by Falls Efficacy Scale
  - Associated with age, depression, and scores on Berg Balance Scale and Dynamic Gait Index
  - Falls-related efficacy increases more with improvement on DGI than BBS

Fear Of Falling

- "the lasting concern about falling that can lead an individual to avoid activities that he/she remains capable of performing"
  - Tinetti, ME, 1993
- Result – activity restriction that INCREASES risk for falls through increased physical and mental health impairment
- FOF for home-based activities (vs community-based activities) is associated with increased age, depression, lower social support, muscle strength, dynamic balance and visual contrast sensitivity

Fear Of Falling

- Transient vs persistent fear of falling
  - Transient – self-limiting curtailment of activity following a fall
  - Persistent - greater than 3 years, associated with declines in physical function
    - Risk factors: female gender, increased geriatric depression screen score, falls during the past year, clinical gait abnormality

Activities-Specific Balance Scale

- Pt expresses his/her confidence in performing 16 different activities
- Expressed on a scale of 0% (no confidence) to 100% (completely confident)
- Average %'s for total score
- May omit up to 4 items and still achieve valid result

Activities-Specific Balance Scale

- Scores:
  - <50% = low level of physical function
    - Score of <50 correlates to homebound older adult
  - 50%-80% = moderate level of physical function
  - >80% = high level of physical function
  - Scores <85 in people >60 indicate balance dysfunction

Falls Efficacy Scale

- 11 items, patient rates confidence level from 1 (very confident) to 10 (not confident at all)
- Sum scores for total result
- Score >70 = fear of falling

Timed Up and Go Test (TUG)

TUG score Interpretation

- Mean TUG scores for >60 years of age was 9.4 (8.9-9.9) seconds Bohannon RW 2006
  - 8.1s (7.1-9.0) for 60 to 69 year olds
  - 9.2s (8.2-10.2) for 70 to 79 years
  - 11.3s (10.0-12.7) for 80 to 99 years
- Increasing scores indicate impaired mobility with >30s indicating dependency

TUG Scores per Decade

- 3-5th decade (4.4; 4.6 & 4.9s)
- 6th decade 5.6s
- 7th decade 6.7s
- 8th decade 7.8 s
- All adults should achieve 10s or less Vereeck L et al 2008

Factors affecting the TUG

- Ankle plantar-flexor and subtalar invertor force accounted for 48.4% of the score on the TUG (Daubney & Culham, 1999)
- Gait speed
- LE strength for transfers (sit-to-stand) (Rikli & Jones, 1999)

Gait Speed

Slow gait speed is the single best predictor of functional decline and disability in many different populations

Gill et al, 1995; Guralnik et al, 2000; Studenski et al; 2003

Gait Speed

- <1.0m/s (3.28 ft/s) identifies well-functioning people at high risk of health-related outcomes Cesari M et al, 2005
  - Persistent LE limitation (not being able to walk ¼ mile or climbing 10 steps without resting) +LR = 2.84; -LR = .71
  - Hospitalization +LR = 1.33; -LR = .90

- 0.6m/s can be considered a cut off for
  - Frailty
  - Nursing home eligibility
  - Risk for hospitalization
    - 41% of people who walked <0.6 m/s were hospitalized at least once as compared with 26% of intermediate walkers (0.6-1.0 m/s) and 11% of fast walkers (>1.0 m/s)
- Predictor of change in function over 1 year (Studenski et al, 2003)

Functional Ambulation Category

- Household ambulators 0.23-0.27 m/s
- Limited community ambulators
  - 0.4-0.8 m/s (moderate gait impairments) Perry J et al, 1995
- Minimum community ambulation (mild gait impairments) >0.8m/s Perry J et al, 1995
- 1.2 m/s – 1.3 m/s (240 ft/min – 255 ft/min) usual adult walking speed Hageman & Blanke, 1986; Blanke & Hageman, 1989; Bohannon,1997

Usual vs fast gait speed

- Should expect gait speed to be a minimum of 0.33m/s faster than usual gait speed
- In stroke, fast gait speed is about 1.32x faster than comfortable gait speed
  - This holds throughout the first two years following stroke Kollen B et al, 2006
- For gait speeds of >1.0m/s plantar flexion strength may be particularly important Dean CM et al 2000

Norms for Gait Speed

Steffen et al, 2002; Bohannon, 1997

Age	Gender	Mean Comfortable Gait Speed	Mean Fast Gait Speed
60-69	Male	1.59m/s (Steffen et al 2002) 1.36m/s (Bohannon)	2.05m/s 1.93m/s
	Female	1.44m/s 1.29m/s	1.87m/s 1.77m/s
70-79	Male	1.38m/s 1.33m/s	1.83m/s 2.07 m/s
	Female	1.33m/s 1.27m/s	1.71m/s 1.75 m/s
80-89	Male	1.21m/s (Steffen et al 2002)	1.65m/s (Steffen et al 2002)
	Female	1.15m/s (Steffen et al 2002)	1.59m/s (Steffen et al 2002)

Women's Health and Aging Study (Moderately disabled women)

Ferrucci et al http://www.grc.nia.nih.gov/branches/ledb/whasbook/chap4/chap4.htm

Comfortable//Fast m/s	N=1002	65-74	75-84	85+
Mean	0.6//0.9	0.7//1.0	0.6//0.9	0.4//0.7
5th percentile	0.2//0.2	0.3//0.4	0.2//0.3	0.1//0.2
25th percentile	0.4//0.6	0.5//0.8	0.4//0.6	0.3//0.4
50th percentile	0.6//0.9	0.6//0.8	0.6//0.6	0.6//0.4
75th percentile	0.7//1.1	0.7//1.3	0.8//1.1	0.6//0.9
90th percentile	1.1//1.7	1.1//1.7	1.1//1.7	0.8//1.3

MCID Gait Speed

- MCID for small change = 0.05m/s
- MCID for substantial change = 0.10m/s *Perera S, et al 2006*
- MCD for comfortable gait speed in people s/p hip fracture is 0.08m/s Palombaro KM et al 2006

Improving gait speed

- Demands of push off are greater, requires greater knee flexion during swing and a longer step length (Brach et al, 2001)
- Increase gastroc strength
- Knee extension strength (32%) improves gait velocity (8%) [1.04 m/s – 1.12m/s], especially in weaker individuals (Judge et al, 1993)

6 Minute Walk Test

6 Minute Walk Test Norms for Healthy Adults

- 60-69 years for men is 572 m (1876 ft)
  for women is 538 m (1765 feet)
- 70-79 years for men is 527 m (1728 ft)
  for women is 471 m (1545 ft)
- 80-89 years for men is 417 m (1368 ft)
  for women is 392 m (1286 ft)

Steffen et al 2002

Physiologic Changes

ACSM Guidelines, 2011

- A delayed decrease in HR (☒ 12) during the first minute of recovery (after exercise) is a powerful predictor of overall mortality (Cole et al, 1999)
  - Sn = 56% (☒ 12 b/m); .33 (☒ 8 b/m)
  - Sp = 77% (☒ 12 b/m); .90 (☒ 8 b/m)
    - +LR = 2.43; -LR = .57 (12 b/m);
    - +LR = 3.30; -LR .74 (8 b/m)

Borg Scale of Perceived Exertion

Modified Borg Scale			RPE - Original	
0	Nothing at all		6	
0.5	Very, very weak	(Just noticeable)	7	Very, very light
1	Very weak		8	
2	Weak	(light)	9	Very light
3	Moderate		10	
4	Somewhat strong		11	Fairly light
5	Strong	(heavy)	12	
6			13	Somewhat hard
7	Very Strong		14	
8			15	Hard
9			16	
10	Very, very strong	(almost max)	17	Very hard
			18	
			19	Very, very hard
			20	

Stair Climbing

- Step height predicts falls
  - 11% of falls incurred by women occur while climbing stairs Bergland A et al 2003
  - 4/5 of falls occur while descending stairs Hamel KA et al 2005; Lord SR et al 2000
  - 1 in 5 women cannot negotiate a standard stair Bergland A et al 2008
- Ability to negotiate steps is correlated with TUG, max gait speed, walking aids, OLST, Functional reach Bergland A et al 2008

Stair climbing

- 9 stairs up and down with and without handrail = 15.2s in individuals with OA of hip or knee who where scheduled for surgery Stratford PW et al 2006
- Expect norm of .5-1.0 second per stair
- MCID for 12 steps
  - Ascent = 0.67s'
  - Descent = .90s

Impairments Related to Stair Climbing

- Concentric forces at knee and ankle for forward vertical progressions Shumway-Cook & Woollacott 2007
- Descending stairs require eccentric contraction of the hip, knee, and ankle extensors
- Weight shifting

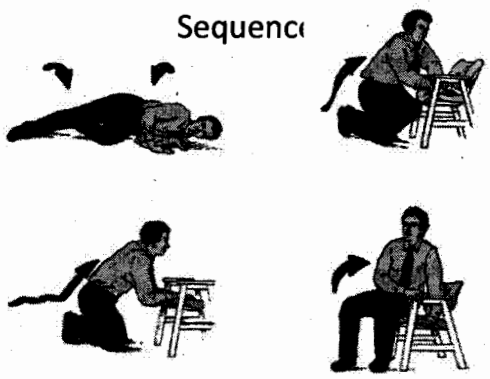
Floor Rise Test

- Inability to rise from the floor is associated with age, higher morbidities and lower functional capacity
- Associated with fear of falling

Floor rise test

- Can time both up and down from floor (separately or together)
- Allow use of chair and/or person, but document assistance needed
- Floor position should be 75% of body in contact with floor
- End of test is when steady on feet (not stumbling or moving)

Sequenc



Floor Rise Test

- Sample of 73 subjects; mean age 75 +/-5 years
  - Time to floor 5.9s +/-0.6s
  - Time to stand from floor = 8.2s +/-0.8s

Bergland A 2005

Berg Balance Scale

Predictive Accuracy of BBS

- Berg never intended the BBS to be used as a dichotomous scale but rather as a clinical measure of balance Muir S et al 2008
- Evaluated predictive accuracy for falls, multiple falls, and injurious falls on 187 older folks with a follow-up of 1 year
  - Mean age = 79.47; 65% were men
  - Used 45 as cutoff
- Any fall: + LR =1.92; -LR = .86
- Multiple falls: + LR = 3.23; -LR = .67
- Injurious Falls: + LR = 2.07; -LR = .83

Other Useful Predictions

- Score of **45** identifies those who are safe independent ambulators and those who may require assistive devices/supervision
- Those below 45 (impaired) were 2.7 times more likely to experience multiple falls Berg, 1992

Take Homes

- BBS can predict falls, need for assistive device, and discharge status
- Is responsive to change, making it a good tool to monitor change
- BBS is an excellent tool to identify impairments

BBS - Responsiveness to Change

- MCID was 6 BBS points
- In people with Parkinson Disease - MDC = 2 points Lim L et al 2005
- Depends on the initial score Donoghue D 2009
  - 0-24 MCID = 4.6
  - 25-34 MCID = 6.3
  - 35-44 MCID = 4.9
  - 45-56 MCID = 3.3

BBS Normative Scores Steffen 2002

Age	Gender	Mean	Normal range
60-69	Male	55	53-56
	Female	55	51-56
70-79	Male	54	48-56
	Female	53	45-56
80-89	Male	53	49-56
	Female	50	44-56

BBS and Impairments

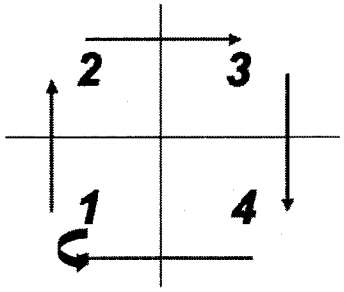
- Ankle DF and inverters are responsible for 58% of the BBS Daubney & Culham, 1999
- BBS predicted 30% of ambulation difficulty in individuals with stroke Michael KM et al, 2005

Four Square Step Test

Dite & Temple, 2002; Dite & Temple, 2002

- Clinical measure of rapid stepping and obstacle avoidance
- Used to predict falls
  - Requires rapid change of direction over a low obstacle
  - Timed
  - Requires some memory
  - Can use a cane

Four Square Step Test (FSST)



Physical Performance Test

Physical Performance Test (PPT)

- Developed for measuring several aspects of physical function in the older adult
- There is a 7-item and a 9-item version
  - 9-item version includes stair climbing.
- Looks at ADL's, IADL's and physical abilities Rozzini, 1993
- Simple, inexpensive, used in any type of setting.
- Takes about 10 minutes

PPT scores

- 10th percentile...12 (9-item),11 (7-item)
- 25th percentile...21 (9-item), 15 (7-item)
- 75th percentile...29 (9-item), 22 (7-item)
- 90th percentile...31 (9-item), 24 (7-item)
- max score.....36 (9-item), 28 (7-item)
- Average age 79 yo, >80% (I) in basic ADL's

Reuben and Siu,1990

Modified PPT Brown, MB, 1998

- Replaced first 2 tasks with balance tasks (standing balance, semi tandem and tandem) and timed 5 rep chair rise
- Developed a frailty index
  - 32-36 Not frail
  - 25-32 Mild frailty
  - 17-24 Moderate frailty
  - <17 Dependent

Chair Rise Test or Sit to Stand

- Test of LE strength, particularly the quads (moderate correlations of .45-.68) across studies Ritchie C et al 2005
- Instruct person to cross arms over chest, on go to rise to standing and sit again as many times as possible in:
  - 30 seconds
  - Timed 5 repetitions
- Describe any adaptations

Predictive Ability of 5 Repetition Timed Chair Rise

- Score of 14.2 s identifies people with balance dysfunction Whitney SL et al, 2005
  - +LR = 1.49; -LR = .83
- 15s predicts an increased risk of falls over next 18mo-3 years
  - +LR = 1.57; -LR = .69 Buatois S et al 2008

Norm Values for Timed 5 Repetition Chair Rise

- 1002 moderately-severely disabled women
  - 65-74 y.o = 14.7 s
  - 75-84 y.o = 15.7 s
  - 85+ = 16.3 s
    - http://www.grc.nia.nih.gov/branches/ledb/whasbook/tablcont.htm
- 11.34 s±2.44 s in 47 women age 61-67 McCarthy EK et al, 2004

One-leg Stand Test (OLST)

- Stand on dominant foot with arms folded across chest, barefoot with eyes open
- Timing starts when subject raised one foot off the ground and stopped when a variation of the pre-established mode occurred:
  - Displacement of WB foot
  - Suspended foot touching the ground
  - Use of suspended limb to support WB limb
- Stop test at 30 s

OLST Norms in 500+ Healthy adults

Springer BA et al 2007

Age (M&F)	Eyes Open	Eyes Closed
18-39	43.5 (5.1)	9.4 (9.4)
40-49	40.3 (10.8)	7.3 (7.0)
50-59	37.0 (12.6)	4.8 (4.8)
60-69	26.9 (16.6)	2.8 (2.2)
70-79	15.0 (13.9)	2.0 (1.6)
80-89	6.2 (9.3)	1.3 (0.6)

OLST

- Cut off time of 10 seconds can be used as a marker of poor balance for the following:
  - In 3rd and 4th decades, preferred test is OLS - eyes closed
  - 5th and 6th decades - tandem stance with eyes closed is preferred test
  - 7th and 8th decades - preferred test is OLS with eyes open
    Vereeck L et al 2008
- 2.9 s for men and 2.6 s for women in a group of mostly nursing home residing older individuals (mean age of 81) Singh A et al, 2006

Activity and Obesity – Societal Changes

- 66% of people over 75 do nothing in terms of physical activity
- 50% of people between 65-74 do nothing
- 42% of people between 45 and 64 do nothing (Mokdad et al, 2001)
  - Physical activity is defined as 20 minutes of exercise 3x/ week

Exercise As An Intervention To Prevent Falls

The Power of Exercise

"If exercise could be packed into a pill, it would be the single most widely prescribed and beneficial medicine in the nation."

Source: Robert N. Butler, M.D., Pulitzer Prize winning author and President/CEO, International Longevity Center

Effective Exercise for Falls

- Minimum dose = 50 hours over 3-6 months
  - Must last longer than 12 weeks for consistent fall reduction
  - Those who start program but do not achieve 50 hours at HIGHER risk for falling!!!
  - Why?
- Challenging balancing exercises
- Did NOT include a walking program

Sherrington et al JAGS 12/08

Effective Exercise

- **Must be of**
  - **Sufficient intensity**
  - **Challenging**
  - **Relevant (focus on function)**

What is sufficient intensity?

- Overload
  - –Start low and work on form (~ 2 weeks)
  - –11–16 on Borg Scale of Perceived Exertion (RPE)
  - –Maximum repetitions possible 10-15 before muscle failure

Overload

- Does walking improve LE strength?
- A tissue must be exposed to a load to which it is not normally exposed to improve in function ACSM 2000
- Training stimulus must be at least 60% of maximum ACSM 2000
- Overload is the critical parameter upon which the extension of the limits of human performance depends Moffroid MT & Whipple RH, 1970

6	
7	Very, very light
8	
9	Very light
10	
11	Fairly light
16	
17	Very hard
18	
19	Very, very hard
20	

BORG PERCEIVED SCALE OF EXERTION

Specificity of Exercises

- Balance
  - – Incorporate vestibular, visual & somotosensory components (head turns, eyes closed, altering base of support, compliant surfaces)
  - – Progression of task difficulty
    - dynamic activities with varying base of support

Balance

- Ankle strength
- Narrowing base of support
- Reaching outside base of support (BOS)
- Incorporate movement through various planes
- Alters visual input (move head, close eyes)
- Change stability of BOS – compliant surfaces
- Speed of movement

Functional Strengthening

- Functional training should be
  - – Multiplanar
  - – Balance dominated
  - – Asymmetrical
  - – Velocity specific - dynamic
  - – Integrated
  - – PROGRESSIVE
    - Overload a movement vs a muscle!!!

Concept of Functional Strengthening

- Correct execution ☒ Increased intensity
- Simple ☒ Complex
- Normal Speed ☒ Slow or Fast
- Stable ☒ Unstable
- Eyes open ☒ Eyes Closed
- Low force ☒ High Force

Examples of Functional Progression

- Balance
  - Parallel Stance
  - Staggered Stance
  - Tandem Stance
  - Unilateral Stance
- Vision
  - Eyes open
  - Eyes closed
- Surfaces
  - Stable
  - Compliant
- With Movement
  - Head movement
  - Arm movement
    - One arm
    - Both arms
    - Alternating arms
  - Leg Movement
- Planes
  - Sagittal
  - Frontal
  - Transverse

Examples of Functional Progression

- Squatting/Lunging
  - Parallel stance
  - Staggered Stance
  - Split Squat
  - Stepping/Walking Squat
  - Lunge and Reach
  - Single leg
  - On toes
- Surfaces
  - Stable
  - Stepping on to compliant
  - Standing and stepping on compliant
- Planes
  - Sagittal
  - Frontal
  - Transverse

Examples of Functional Progression

- Gait
  - Walk
  - March
  - Jog
  - Skip
  - Jump
  - Bound
  - Heels/Toes
  - Sideways/Crossover
- EO/EC
- With obstacles -- walking around/over
- Moving head
- Compliant surfaces
- Starts/Stops/Turns
- Perturbations

Balance Exercises

Balance Exercises -

Balance -



Balance -



Balance



Balance



Balance



Balance



Other Potential Exercises

Community exercise

Recommendations

- CDC and ACSM, Recommendations
  - ACSM 1995: 30 minutes of moderate-intensity on most days of the week
  - CDC: 30 minutes at least 5x a week = ***150 minutes/wk***
- PA Guidelines, what do they recommend?
  - CDC/ACSM too specific
  - **150 minutes/wk in various ways**

PA Guidelines: Active Adults (Ages 18-64)

- 150 minutes(2.5 hrs) of moderate-intensity exercise or 75 min(1.25 hrs) of vigorous – intensity exercise per week
  - Aerobic activity should be performed in bouts of at least 10 min
- Additional benefits see with 300 min(5.0 hrs) of moderate-intensity PA or 150 min(2.5 hrs) of vigorous-intensity exercise per week
- Muscle-strengthening should involve major mm groups 2+ days a week

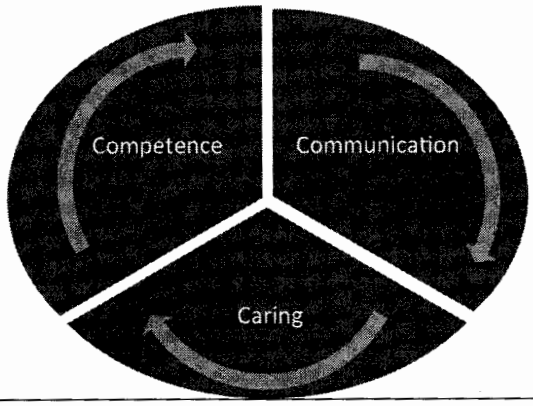
PA Guidelines: Older Adults

- Older adults are the same as adults unless special circumstances exist
  - Should do as much PA as abilities allow
  - Some is better than none
- PA should also have focus on strength and improvement of balance
  - Balance decreases risk of falls

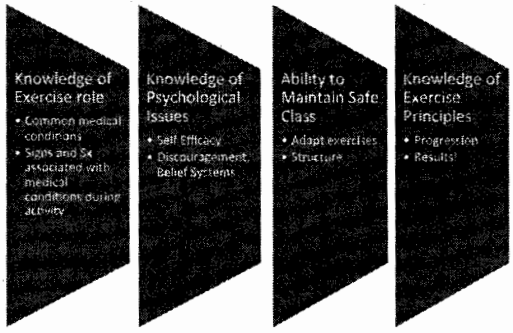
Community Exercise Leader Qualifications & Characteristics

Suggested *Minimal* Qualifications

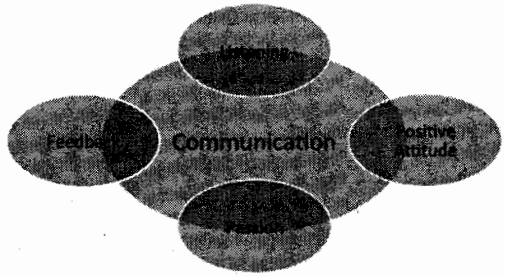
- At least 18 yrs of age
- Health Professions Education ideal
- CPR/AED certification
- Interest in promoting wellness to groups of adults in local parks
- Creative, Flexible
- Fit & Energetic ☺
- Good group participation and leadership
- Belief in the value of regular physical activity and participation physical wellness
- Instructor training course☺



Competence



Communication



Caring

"Successful instructors show genuine interest in participants' progress and general well-being, while portraying patience and understanding."- J Jones & D Rose

7 Personal Characteristics of a Good Leader

1. Exemplary Character
2. Enthusiasm
3. Confidence
4. Function well in unexpected situations
5. Stay calm in unexpected situations
6. Focused
7. Excellence

Additional Characteristics Our Experience

- Dress appropriately
- Enthusiasm and Excitement
- Use of simple, easy to follow instructions
- Use of demonstration
- Inclusion of all
- Ability to recognize and alter activities when necessary
- Enjoyment of activities
- Project your voice

Best Practices for the Exercise Class

Components of Exercise Class

- Warm up
- Aerobic - endurance
- Strength
  - speed
- Balance
  - agility
- Flexibility
  - Dynamic
  - Static
- Cool down

Warm Up

- For a 45 minute session
  - 5 minutes is probably sufficient for the type of intensity we will be doing
  - Objective: Move all body parts and large muscle groups (dynamic flexibility)
    - Running, skipping in place (lots of variations)
    - Jumping jacks
    - Arm circles
    - Toe touches

Aerobic

- We are promoting physical activity that meets the minimum guidelines so....encourage walking/biking/swimming throughout the week
- 2000 steps - 1 mile
  - Goal is 10,000 steps for health benefits
- Convert activity to steps
  - http://www.oaheymca.org/files/aom-04-adult%20step%20conversion%20chart.pdf
- 45 minute moderate level ex class = 122 steps/min (5490!)

Balance and Agility

- Dynamic balance - keep it challenging!
  - It's about ankles!
  - Reaching outside base of support
  - Performing movements on toes
    - Lunges on toes
  - Progression
    - Narrow stance
    - Eyes closed
    - Head movement
    - Movement with any of the above
- Encourage folks to be safe and to assume a position that allows them to not hold on

Flexibility

- Cool down - 5 minutes
  - Stretch muscles you've worked
  - Static stretching
  - Yoga positions

Outcomes

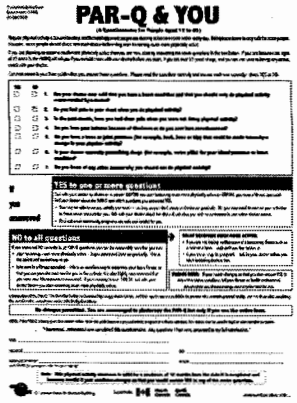
- Exercising just 2 times/week for 45-60 minutes emphasizing functional movements with sufficient overload will result in improved outcomes in 4-6 weeks.
  - Decreased pain (my knees, back don't hurt as much)
  - Ease of movement (I can walk up stairs easier)
  - Better balance
  - More energy
  - Increased physical activity

Safety Considerations

Screening

- Par-Q
  - Screen for any yes answers....find out about total joints, musculoskeletal issues
  - Ask about history of osteoporosis (will want to caution not to do a lot of trunk flexion)
  - Ask about diabetes (participants will need to take responsibility for blood sugars)

handout


PAR-Q & YOU

- 18-69 age
- Self-assessment
- May be too vague
- Readily available

Screening

- EASY <easyforyou.info>
  - Recognizes everyone can exercise
  - Provides guidelines for people with special issues
- Our criteria
  - Must be able to stand and/or walk for 60 minutes
  - Get up and down from the floor without physical help