

# An Evidence Based Walking Resource for Arthritis Management

2019 OSPA Annual Fall Conference

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# SCHOLARLY WORK

**Reyna, J.**, Chui, K., Yen, SC., Tudini, F., Hilliard, J. Physical Therapy for the Older Adult: An Evidence Based Approach to Examination and Intervention. Lewis, Chui, Gray and Huber (Editors), Wolters Kluwer Health, Philadelphia, PA, 2017: 1262-1298

Galindo, T., Weyer, A., **Reyna, J.** Evidence for Transient Receptor Potential (TRP) Channel Contribution to Arthritis Pain and Pathogenesis. *Pharmaceuticals* 2018; 11 (4): 105

2017

2017

2018

2018

2019

**Reyna, J.** (PI), Hinkel, J. (Co-PI). Increasing access to arthritis-appropriate evidence-based interventions (AAEBIs) among adults living with arthritis: Walk With Ease. \$4,000, 2017, National Association of Chronic Disease Directors

**Reyna, J.** (PI), Hinkel, J. (Co-PI), Harris, A (Co-PI). Walk With Ease Program Services. \$8,000, 2018, Oregon Health Authority, Public Health Division CPHP, Health Promotion and Chronic Disease Prevention.

**Reyna, J.** An Evidence Based Walking Resource for Arthritis Management. Oregon Society of Physician Assistants Annual Conference; October 2019. Gleneden Beach, OR.

# LEARNING OBJECTIVES

## Learning Objectives:

- 1.) Identify the different stages of osteoarthritis, prevalence, epidemiology and impact on the quality of life of individuals living with arthritis.
- 2.) Identify candidates who would benefit from an evidence based community program with varying formats- Walk With Ease.
- 3.) Learn how to develop a workflow that provides either a hands on or a hands off approach and increases the awareness of evidence based programs within a waiting room/lobby

# AUDIENCE BACKGROUND?

- How many in attendance are:
  - Surgery
  - Emergency Medicine
  - Family Medicine/General Practice
  - Internal Medicine
  - Hospital Medicine



# AUDIENCE BACKGROUND?

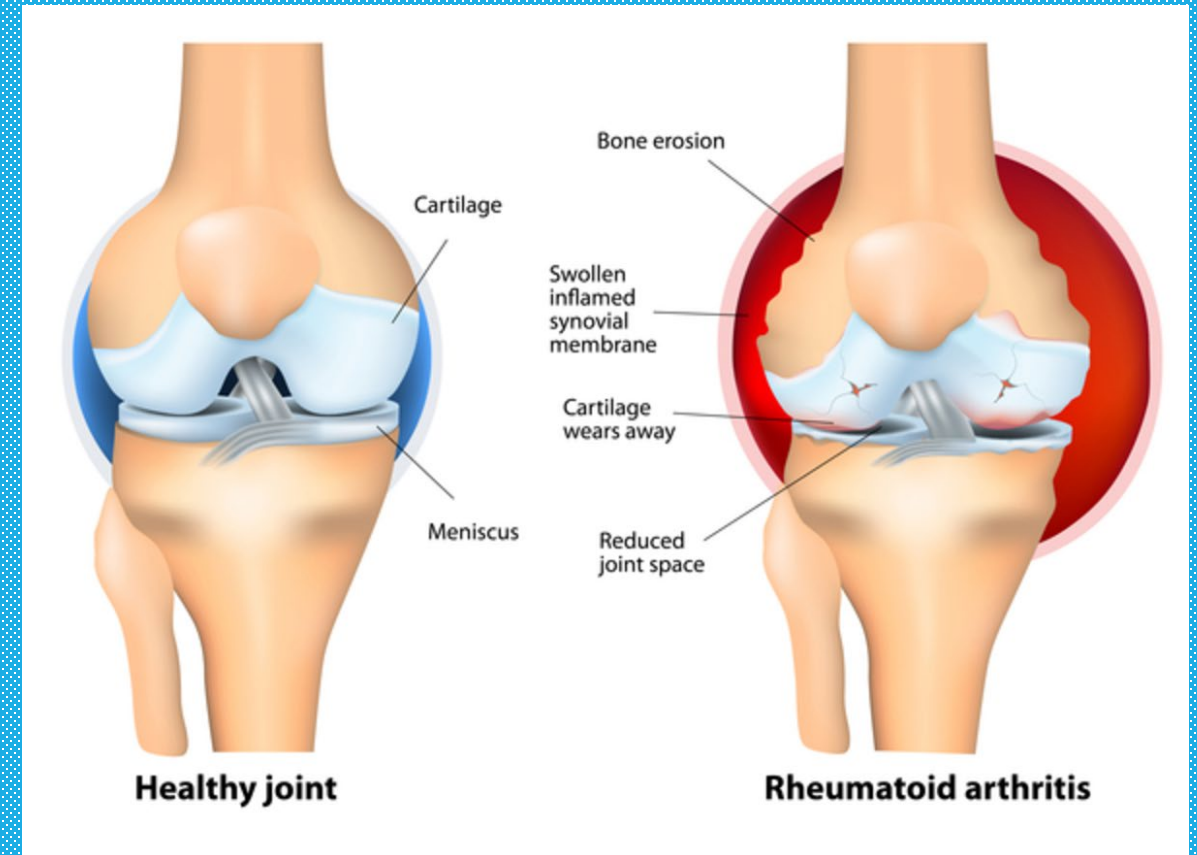
- How many in attendance know of evidence-based community program(s)?
- Know of someone who has arthritis?
- Know of an elderly person who sustained a fall?
- Know of someone whose health deteriorated after sustaining a fracture?
- Know of someone who needed surgery due to arthritis (e.g., joint replacement)?

# WHAT ARE EVIDENCE-BASED COMMUNITY PROGRAMS?

- Research Based
- Designed to promote health and prevent diseases among all adults
- Lower the risk of chronic diseases and falls OR
- Improve long-term effects of chronic diseases and falls

# EXAMPLE OF A CHRONIC DISEASE

- **Arthritis:**
  - Effects the joints and tissues around the joint
  - Fibrocartilage
  - Hyaline cartilage
  - Synovial membrane
  - Over 100 types of arthritis
- **Most Common Types of Arthritis:**
  - Osteoarthritis (most common)
  - Rheumatoid Arthritis
  - Psoriatic Arthritis
  - Fibromyalgia
  - Gout



# STAGES OF OSTEOARTHRITIS

- Stage 0 (Normal):
  - No Joint damage
- Stage 1 (Minor):
  - Minimal degeneration & bone spurs
  - Negligible pain
  - X-ray unremarkable
- Stage 2 (Mild):
  - Joint space preserved
  - Additional bone spurs
  - Symptoms of joint pain are evident
- Stage 3 (Moderate):
  - Obvious degeneration present
  - Joint space decreased
  - Obvious joint inflammation
  - Additional bone spurs are evident
  - Crepitus is experienced
- Stage 4 (Severe):
  - Significantly reduced joint space
  - Joint is inflamed and warm
  - Cartilage has deteriorated completely
  - Synovial fluid is decreased
  - Significant bone spur accumulation
  - Significant pain



# EXAMPLE OF COMPLICATIONS FROM A FALL

- Sequela: A condition which is the consequence of a previous disease or injury
- 70 year old female falls and sustains a hip fracture
- In 95% of cases a fall is the primary cause
  - Females make up 81% of hip fractures sustained
    - **Live longer**
    - Average age is 79 years old
- According to Keene et al. she should expect a mortality rate within 1 year:
  - At age 70: 28.9%
  - At age 75: 24.3 %
  - At age 80: 36.4%
  - At age 85: 41.9%
  - Except at age 75, mortality rate has a positive correlation with age.

# CO-MORBIDITIES ASSOCIATED WITH ARTHRITIS

- **Co-Morbidity:**
  - Simultaneous presence of two chronic diseases or conditions in a patient
- **Among Oregon Adults (2016)**
  - 39% are obese (defined as body mass index of  $\geq 30$ )
  - 38% of those who have ever had diabetes mellitus
  - 47% of those who have ever had cardiovascular disease

# PREVALENCE OF ARTHRITIS IN OREGON

- Age adjusted to the standard 2000 US population
- Among Oregon Adults (2016)
  - 24% have some form of arthritis
  - 53% of those  $\geq 65$  years of age have some form arthritis
  - 15,420 people were hospitalized due to rheumatoid arthritis and/or osteoarthritis
  - ~\$237 million was spent on hospitalizations attributed to rheumatoid arthritis and/or osteoarthritis

# IMPACT ON QUALITY OF LIFE

- Age adjusted to the standard 2000 US population
- Among Oregon Adults (2015)
  - 53% report their symptoms limit their ability to conduct routine activity
  - 41% of those between 18-64 years of age
    - influences the amount and type of work performed (not age adjusted)
  - Average joint pain score: 4.5/10, despite use of medication(s)
    - Visual Analog Scale on a 0-10 pain rating (0 is no pain; 10 is maximum pain)

# ADVICE AND SELF MANAGEMENT

- Among Oregon Adults (2015)
  - 63% report their healthcare provider has suggested:
    - Exercise or physical activity for arthritis or joint pain
  - 81.5% have NEVER taken a class to help manage problems related to their arthritis
    - However, 49% of those with arthritis reported walking for physical activity
  - 15.5% have EVER taken a class to help manage problems related to their arthritis



# CONSERVATIVE MEASURES

- Medications
  - NSAIDs
  - Corticosteroid Injections
  - Disease Modifying Anti-Rheumatic Drugs
  - Transient Receptor Potential Channels
    - Vanilloid 1 (TRPV1)
    - Ankyrin 1 (TRPA1)
- Physical Therapy
  - Gentle Strengthening
  - Gentle Stretching
  - Cardiovascular Training
  - Balance/Proprioceptive Training



# CONSERVATIVE MEASURES

- Assistive Devices
  - Single Point Cane
    - Front/Four Wheeled Walker
      - More stable
      - Permits rest periods (stand/sit)
- External Devices(s)
  - Knee Sleeve
  - Knee Braces





# WALK WITH EASE (WWE)

- Evidence-Based Community Program
  - Simple and Cheap
    - Free through OSU Extensions
  - Self Directed
  - Group
  - Virtual (Hybrid)
- Structured Walking Program
  - Performed over a period of 6 weeks
  - 18 total sessions
  - Up to 30 minutes in duration each
  - Benefits all age groups
  - Warm up/Cool Down Phases (Stretching & Strengthening)





# WALK WITH EASE

- Supporting Evidence for Wellness Programs
- Meta-analysis by Chapman, L.
  - 26% reduction in healthcare costs
  - 27% reduction in worker's compensation claims
  - Assessed wellness programs within a workplace
- Nyrop et al. 2011
  - Workplace Activity Limitations Scale (WALS) (e.g., sit, stand, kneel)
    - Assessed WVE in adults with arthritis
    - Scores were statistically significant at 6 weeks ( $p < 0.001$ ) from baseline
    - Values were maintained at 1 year follow-up ( $p < 0.87$ )

# WALK WITH EASE

- Supporting Evidence for Wellness Programs
- Nyrop et al., 2014
  - Self Directed vs. Group
    - Self-reported outcomes were similar at 6 weeks post intervention and 1 year follow-up
    - Walking duration goal of 30 min at 3x/week
      - Maintained by all participants at 1 year follow-up
- Callahan et al., 2011
  - 468 participants
  - No difference in self directed vs. group formats
  - Decreased pain and disability (modest to moderate effect sizes)
  - Increased strength, balance and walking pace (modest to moderate effect sizes)
  - No safety concerns were associated with participation

# WALK WITH EASE- PROMOTING

- Establish group courses with community partners in Oregon
  - Requires leadership training (4 hour self directed online course)
- Establish direct referrals by healthcare providers to our community partners
- Develop workflows with providers for registration of self-directed participants
  - Web portal with QR code
  - <https://extension.oregonstate.edu/walk-ease>
  - Favorable for those with a busy agenda
  - Highly integrated regardless of environment
  - No special equipment



# WALK WITH EASE- PROMOTING

- Site(s) for Promotion:
  - Company web-site
  - Social media (e.g., Facebook; Instagram; Blogs)
  - Check-in/lobby posting
  - Upon establishing plan of care
  - Upon discharge



# WALK WITH EASE

- Potential Challenges:
  - Draws on administrative personnel resources
  - Establish rapport between providers and with community partners
  - Establish champions with resources to execute a workflow at their facility
  - Rural communities struggle to incorporate due limited walking paths (e.g., sidewalks)
  - Impact of weather
  - Language barriers
  - Health literacy barriers

# WALK WITH EASE

- Perfect World
  - Available to all individuals with arthritis wishing to initiate a walking program
  - Available to all individuals regardless of disease or medical condition
  - Consistently offered by healthcare providers to all patients who benefit from physical activity
  - Patients are proactive and follow through with recommendations
  - Covered by third-party payers.

# QUESTIONS?

Thank you!

- Audience
- 2019 OSPA Committee

# REFERENCES

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<https://www.cdc.gov/arthritis/index.htm>

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