Fall prevention and chronic conditions
Overview

**Chronic Conditions**
- Arthritis
- Cardiovascular Disease
- Diabetes
- Dementia
- Depression
- Hearing Loss
- Visual Loss

**Fall Risk Factors**
- Decreased Range of Motion, Flexibility and Strength
- Chronic Pain
- Exercise Intolerance
- Physical Inactivity
- Irregular Vital Signs
- Visual and Hearing Loss
- Impulsivity and Forgetfulness
- Certain Medications

**Solutions**
- Engage in physical activity, maintain a healthy weight and a regular sleep schedule
- Create a safe home environment
- Rely on visual or auditory cues
- Set reminders
- Discuss medications and lifestyle changes with health care provider

**Program Options**
- A Matter of Balance
- Walk With Ease
- Tai Chi for Arthritis and Fall Prevention

Living Healthy Program Suite:
- Chronic Disease Self-Management (CDSMP)
- Chronic Pain Self-Management (CPSMP)
- Diabetes Self-Management (DSMP)
This information about Chronic Conditions and Fall Risk is meant to:

• Explore the relationship of chronic conditions with falls, including types of diseases and risk factors
• Emphasize the importance of addressing fall risk and chronic conditions as part of healthy aging
• Identify solutions and program options

This information is not meant as medical advice or diagnosis, nor is it meant to be a comprehensive overview of all chronic disease types, fall risk factors, solutions, or options.
Evidence-based programs supported by Healthy Aging NC --Continuum of Care--

Chronic Disease Self-Management Programs

A Matter of Balance

Walk With Ease

Tai Chi for Arthritis & Fall Prevention

Higher Risk

Lower Risk
Common Types
- Osteoarthritis
- Fibromyalgia
- Rheumatoid Arthritis

Fall Risk Factors
- Decreased lower body strength
- Poor balance
- Increased fatigue
- Swollen/tender joints

Solutions
- Participate in aerobic and/or resistance exercise
- Target balance, gait and muscle strength
- Discuss medication/lifestyle changes with health care provider
- Address fatigue and swollen joints

Program Options
- A Matter of Balance
- Walk With Ease
- Tai Chi for Arthritis and Fall Prevention
- Living Healthy CDSMP or CPSMP
Cardiovascular Disease

Common Types
- Myocardial infarction (heart attack)
- Atrial fibrillation (arrhythmia)
- Heart failure
- Blood pressure abnormalities

Fall Risk Factors
- Low blood pressure
- Decreased ability to exercise (exercise intolerance)
- Heart rhythm problems
- Poor gait and balance

Solutions
- Increase functional mobility
- Discuss medication/lifestyle changes with health care provider
- Reduce the risk of cardiovascular disease with physical activity; control blood cholesterol, diabetes and obesity

Program Options
- A Matter of Balance
- Walk With Ease
- Tai Chi for Arthritis and Fall Prevention
- Living Healthy CDSMP or CPSMP
Common Types
- Type I: Pancreas produces little or no insulin
- Type II: Body is unable to use insulin to completely control blood sugar levels

Fall Risk Factors
- Peripheral neuropathy (nerve damage)
- Decreased visual, auditory, and cognitive abilities
- Reduced renal function
- Insulin use

Solutions
- Engage in physical activity in a safe environment
- Discuss medication/lifestyle changes with health care provider
- Discuss proper insulin use with health care provider
- Improve control of blood sugar levels

Program Options
- A Matter of Balance
- Walk With Ease
- Tai Chi for Arthritis and Fall Prevention
- Living Healthy CDSMP, DSMP, and CPSMP
Dementia

Common Types
- Alzheimer's disease
- Vascular dementia
- Other disorders related to dementia, including Huntington's, Parkinson's, Traumatic Brain Injury

Fall Risk Factors
- Increased impulsivity, verbal disruptions, attention seeking behavior and poor decision making
- Decline in visual perception, physical activity levels, strength, gait and balance
- Increased demands on caregivers

Solutions
- Engage in physical activity in a safe environment with social support and in activities designed for cognitive enhancement
- Discuss medication/lifestyle changes with health care provider; review use of assisted devices

Program Options
- Walk With Ease
- Tai Chi for Arthritis and Fall Prevention
- Living Healthy CDSMP
Common Types
- Major depressive disorder
- Bipolar depression
- Seasonal affective disorder

Fall Risk Factors
- Impaired mood, mobility and cognition/thinking
- Decline in physical activity and social engagement
- Impaired gait, balance and sleep
- Increased fear of falling

Solutions
- Participate in resistance and balance training
- Discuss medications/lifestyle changes with a healthcare provider
- Be physically active outdoors and/or in a social environment
- Maintain a regular sleep schedule

Program Options
- A Matter of Balance
- Walk With Ease
- Tai Chi for Arthritis and Fall Prevention
- Living Healthy CDSMP
Common Types
- Tinnitus (ringing or noise in the ears)
- Hearing loss (mild-moderate-profound)

Fall Risk Factors
- Difficulty hearing commands, warnings, medical advice, and conversations
- Awareness of auditory, spatial and social environment
- Difficulty with hearing aid use and/or access

Solutions
- Optimize hearing with location and/or technology
- Enhance communication with visual cues and body language
- Engage in physical activity in a safe environment with social support
- Discuss hearing loss and assistive devices with a healthcare provider

Program Options
- A Matter of Balance
- Tai Chi for Arthritis and Fall Prevention
- Living Healthy CDSMP
**Common Types**
- Vision Loss or Impairment
- Near or Farsightedness
- Macular degeneration, Glaucoma, Retinopathy

**Fall Risk Factors**
- Difficulty perceiving obstacles (due to blurred vision, blind spots, optical discomfort, poor depth perception)
- Difficulty with balance
- Reduced contrast sensitivity

**Solutions**
- Optimize lighting and create a safe physical environment
- Support with auditory cues and/or technology
- Regularly consult an ophthalmologist and primary care provider
- Engage in physical activity in a safe environment with social support

**Program Options**
- A Matter of Balance
- Tai Chi for Arthritis and Fall Prevention
- Living Healthy CDSMP

**VISUAL CONDITIONS**
Programs supported by Healthy Aging NC:

Falls Prevention Programs:
  - A Matter of Balance
  - Tai Chi for Arthritis and Fall Prevention


Living Healthy Program Suite:
  - Chronic Disease Self-Management (CDSMP)
  - Chronic Pain Self-Management (CPSMP)
  - Diabetes Self-Management (DSMP)

https://healthyagingnc.com/walk-with-ease/
Walk With Ease
Arthritis
• https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3881513/

Cardiovascular Disease
• https://www.ncbi.nlm.nih.gov/pubmed/26455926
• https://www.ahajournals.org/doi/10.1161/CIRCOUTCOMES.117.004199
• https://journals.lww.com/jcnjournal/Abstract/2016/11000/Falls_in_Patients_With_Heart_Failure__A_Systematic.12.aspx
• https://www.heart.org/en/health-topics/heart-attack/understand-your-risks-to-prevent-a-heart-attack

Diabetes
• https://www.ncbi.nlm.nih.gov/pubmed/27515679
• https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2288549/
• https://www.ncbi.nlm.nih.gov/pubmed/23825617
Dementia
• Risk Factors Associated with Falls in Older Adults with Dementia: A Systematic Review
  https://www.mayoclinic.org/diseases-conditions/dementia/symptoms-causes/syc-20352013

Depression
• https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4880473/
• https://www.sciencedirect.com/science/article/abs/pii/S016749431400154X?via%3Dihub

Auditory Loss
• https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3518403/

Visual Loss
• https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5913798/
• https://www.ncbi.nlm.nih.gov/pubmed/21474773/
A Matter of Balance: Low Vision Toolkit
Includes Coach Instruction Materials, Participant Workbook in 12-Point and 20-Point Font. Master Trainers can purchase the Audio Participant Workbook DVD and Exercises Audio DVD through www.mobmaterials.com

Tai Chi for Arthritis and Fall Prevention: (forthcoming)

NC Division of the Services for the Blind:
https://www.ncdhhs.gov/divisions/dsb

NC Division of the Services for the Deaf and Hard of Hearing:
https://www.ncdhhs.gov/divisions/dsdhh

Example of Technology and Products: https://www.maxiaids.com/
Thank you to Abigail McSwain, UNCA Dec. 2019 graduate for gathering the resources and creating the original version of this powerpoint for an undergraduate research project.

This information is not meant as medical advice or diagnosis, nor is it meant to be a comprehensive overview of all chronic disease types, fall risk factors, solutions, or options.