STAYING STRONG: DM AND EXERCISE

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Goals of Management

- Promote optimal health and wellness
- Prevent or delay secondary complications
- Maximize functional abilities
- Improve/increase participation
- Improve/maintain QOL
Health and 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, 1948

Wellness is an active process through which people become aware of and make choices toward a more successful existence. ~ National Wellness Institute
Musculoskeletal involvement of DM results in progressive decline in strength.

Inactivity and aging also result in loss of muscle strength.

Physical activity and exercise are essential in minimizing strength loss secondary to disuse and inactivity.
Physical Activity Guidelines (2008)

- Aerobic training at a moderate intensity for 2 hours and 30 minutes (5 days of 30 minutes)
- Resistance exercise involving all major muscle groups on 2 or more days per week
- Moderate intensity: able to talk, but not able to sing
- Examples: brisk walking, water aerobics, bicycling, ballroom dancing, gardening
Follow the adult guidelines. If this is not possible, these persons should be as physically active as their abilities allow. They should AVOID INACTIVITY.
Evidence for Exercise

- “Moderate intensity strength training appears not to do harm” (Cochrane Review, 2010)
- “There is level II evidence (likely to be effective) for strengthening exercises in combination with aerobic exercises for patients with muscle disorders.” (Cup et al., 2007)
- “Aerobic training is safe and can improve fitness effectively in patients with myotonic dystrophy.” (Orngreen et al., 2005)
“Physical activity in daily life can be categorized into occupational, sports, conditioning, household, or other activities. Exercise is a subset of physical activity that is planned, structured, and repetitive and has as a final or an intermediate objective the improvement or maintenance of physical fitness.” (Caspersen, 1985)
Types of Exercise

- Stretching (range of motion)
- Strengthening (resistance training)
- Aerobic (cardiovascular training)
Range of Motion

- Active, Active/Assisted, Passive
- Gravity minimized
- Addresses muscle imbalances
- May decrease pain
Aerobic

- Cycling
- Walking
- Aquatic exercise
- Dancing
- Gardening/yardwork

- Moderate intensity: Activity that raises heart rate and respiratory rate, but you are still able to talk.
Resistive

- Body weight
- Free weights
- Machines
- Resistive bands
- Soup cans
- Aquatic exercise

- Moderate intensity - able to complete 12-15 repetitions
Known Benefits of Physical Activity/Exercise

- Control your weight
- Reduce your risk of cardiovascular disease
- Reduce your risk for type 2 diabetes and metabolic syndrome
- Reduce your risk for some type of cancers
- Strengthen your bones and muscles
- Improve your mental health and mood
- Improve your ability to do daily activities and prevent falls, if you’re an older adult
- Increase your chances of living longer
Habitual Exercise and DM

- Retrospective study aimed to look at the differences in strength of individuals with DM1 who were habitually active or sedentary.

- Individuals with mid-range CTG repeats (100-500) who were engaged in regular exercise programs, demonstrated stronger grip, elbow flexor, and knee extensor strength than sedentary counterparts.

- Those who began an exercise program demonstrated a 24% gain in knee extensor strength.

Brady et al., 2014
Minimize Sedentary Lifestyle

- Evidence is mounting regarding the detrimental effects of sitting/being sedentary
- Individuals with DM were noted to sit 7.5 hours/day!
- Be as physically active as you are able
- Set a timer to get up and move around
# Overcoming Barriers to Physical Activity

| Motivation | ✓ Plan ahead. Make physical activity a regular part of your daily or weekly schedule and write it on your calendar.  
✓ Invite a friend to exercise with you on a regular basis and write it on both your calendars.  
✓ Join an exercise group or class |
| Fatigue/Lack of Energy | ✓ Schedule physical activity for times in the day or week when you feel energetic.  
✓ Convince yourself that if you give it a chance, physical activity will increase your energy level; then, try it |

Physical Therapy Intervention

- Individualized care
- Establish patient centered goals following evaluation
- Type, frequency, intensity, duration
- Exercise Recommendations
- Bracing/Orthotics
- Assistive devices
Bracing

[Images of various bracing devices]

http://www.allardusa.com/

medtechbusiness.com

http://www.cascadeorthotics.com
Assistive Devices
Wheelchairs
Questions?