OPMD AND EXERCISE

https://www.mda.org/services/daily-living

Exercising with a Muscle Disease
Insights from research, medicine, exercise experts and people with neuromuscular diseases. Includes information on recommended exercises for those with a neuromuscular disease, as well as their caregivers.

MDA's Quest: Exercising with a Muscle Disease

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OBJECTIVES

- Is it safe to exercise with OPMD?
- Why exercise?
- What type of exercise and how often?
- Adaptations and assistive devices for common mobility problems (time permitting)
Is it safe?

- Traditional concerns
  - Overuse and muscle repair
  - Inability to strengthen

- Current research
  - Human studies
  - Mouse models of Duchenne's MD
    - Endurance vs strength
Why exercise?

- Risks associated with aging / lifestyle
  - Loss of muscle mass after 30
  - Cardiovascular risks
  - Osteoporosis
  - Falls
  - Weight gain with inactivity
- OPMD
  - Strength loss
  - Slow progression
Typical patterns of weakness in OPMD

- Greater frequency proximal LE vs UE
- Impact on
  - Walking
  - Balance
  - Sit to stand
  - Stairs
  - Picking up objects from floor / low surfaces
What type of exercise?

Strength training

Cardiovascular
STRENGTH TRAINING

- RESISTANCE TRAINING
  - Machines
  - Free weights
  - Resistance Bands
  - Body weight / anti-gravity
  - Gravity eliminated
  - Active assistive
PROXIMAL vs. DISTAL

- Trunk muscles (abs and spine)
- Shoulder blade / shoulder girdle
- Hips / pelvic girdle
STRENGTHENING and PROGRESSIVE WEAKNESS

MILD TO MODERATE WEAKNESS
Light resistance, high repetition

VS

SEVERE WEAKNESS
Work stronger muscles, endurance
Strength Training

Determining level of resistance

- 2-3 sets of 10 – 12 repetitions – OR -
- 30 repetitions continuously
- Able to continue
Example of Varying Levels of Resistance: Hip Extension

Note on Eccentric (lengthening) vs Concentric (shortening)
Example of Varying Levels of Resistance: Hip Extension
Example of Varying Levels of Resistance: Hip Extension

A.

B.

C.
STRETCHING AND RANGE OF MOTION

- Stretching for comfort
- Range of Motion (ROM)
- CAUTION: Over stretch – weak muscles
Cardiovascular Exercise

- **TARGET HEART RATE**
  - 70 – 80% of maximum
  - Maximum = 220 – age

- **DURATION / FREQUENCY**
  - Ideal – 20 – 30 min/day
  - Target – 20 -30 min 3 x/ week

- Short bursts of higher intensity
Monitoring Exertion Levels

- Borg Rating of Perceived Exertion - RPE

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
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<tbody>
<tr>
<td>6</td>
<td>No exertion at all</td>
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<tr>
<td>7</td>
<td>Extremely light</td>
</tr>
<tr>
<td>8</td>
<td>Very light</td>
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<tr>
<td>9</td>
<td>Light</td>
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<td></td>
</tr>
<tr>
<td>11</td>
<td>Light</td>
</tr>
<tr>
<td>12</td>
<td>Somewhat hard</td>
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<tr>
<td>13</td>
<td></td>
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<tr>
<td>14</td>
<td>Hard (Heavy)</td>
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<tr>
<td>15</td>
<td>Very hard</td>
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<tr>
<td>16</td>
<td>Extremely hard</td>
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<tr>
<td>17</td>
<td>Maximal exertion</td>
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Rating 13: Somewhat hard
Options for Cardio Exercise

- Walk
- Equipment
  - Treadmills / ellipticals
  - Stationary bikes / steppers
  - Recumbent options
  - Arm bikes / ergometers
  - Light weights with high(er) repetitions
POOL EXERCISE

- Safe environment
- Supportive
- Resistive
- Decreased resistance
- Cardio-vascular
Pain and Exercise

• Delayed onset muscle soreness vs. acute / persistent pain
Monitoring pain

- Never exceed 8
- Never increase > 2 points

Wong-Baker FACES Pain Rating Scale

0 NO HURT 2 HURTS LITTLE BIT 4 HURTS LITTLE MORE 6 HURTS EVEN MORE 8 HURTS WHOLE LOT 10 HURTS WORST

REST AND RECOVERY

48-72 hours between workouts for same muscle groups

At least one full rest day per week

Strength and cardio same day, alternating Upper and Lower body
PACING

- Recovery within 15 min
- Breaking activities into shorter segments with frequent rest
  vs.
- Pushing to complete with excess fatigue at end
- Applies equally to exercise and daily activities
CHALLENGING ACTIVITIES

- Sit to stand
- Stairs
- Picking up objects from floors
- Low / overhead surfaces
Modifications
Modifications
Stairs, Rails and Ramps

Rails on stairs

Vertical rails / grab bars at doorways

Ramps – thinking ahead

One inch of rise per foot of run

“Rest” areas every 5 feet
Modifications / Adaptations

- Moving frequently used items to counter / middle shelves
- Reachers
- Shower chairs
- Grab bars
Mobility Devices

- Canes
- Crutches (Standard, Forearm)
- Walkers (std., 2 wheeled, 4-wheeled, seats)
Wheelchairs and Scooters
Considerations in Selecting

- Primary usage
- Weight and ease of transport
- Transport devices / costs
- Insurance and frequency of replacement
Exercise and OPMD

Is it safe? -

Yes, with appropriate precautions.
Pacing, moderate level, respect pain and fatigue

Why exercise? –

Cardiovascular health, moderate impact of aging and potential other health problems.
Possibly slow progression.

What type? –

Strength and cardio.
QUESTIONS?