

OPMD: PHYSICAL THERAPY AND EXERCISE

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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

Why exercise?

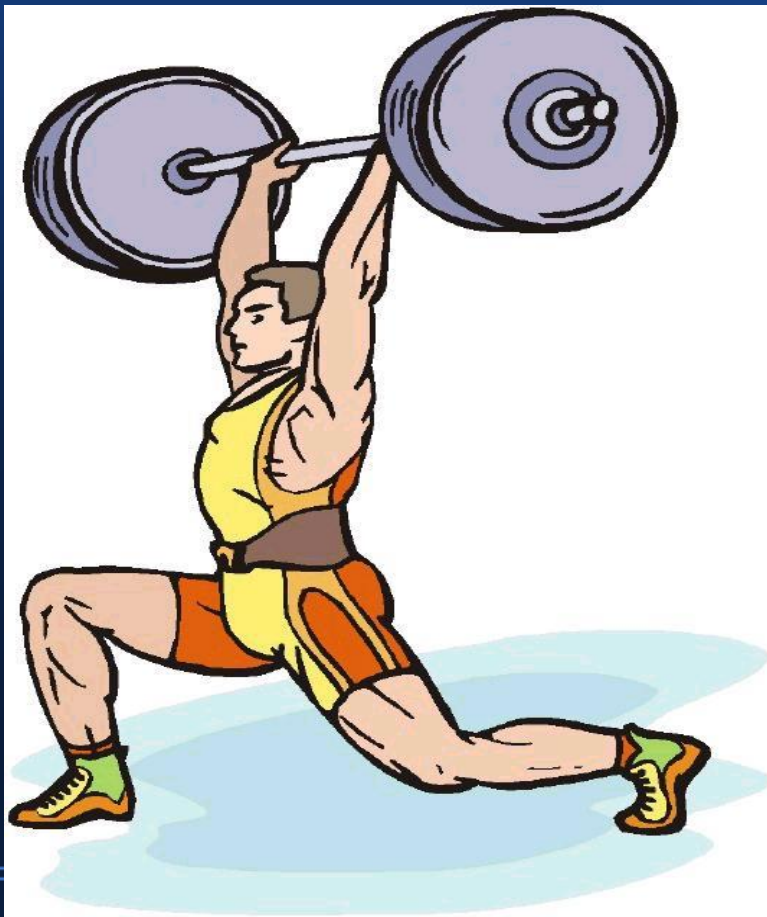
- Risks associated with aging / lifestyle
 - Loss of muscle mass after 40
 - Cardiovascular risks
 - Osteoporosis
 - Falls
 - Weight gain with inactivity
- OPMD
 - Strength loss
 - Slow progression

Why exercise?

- 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

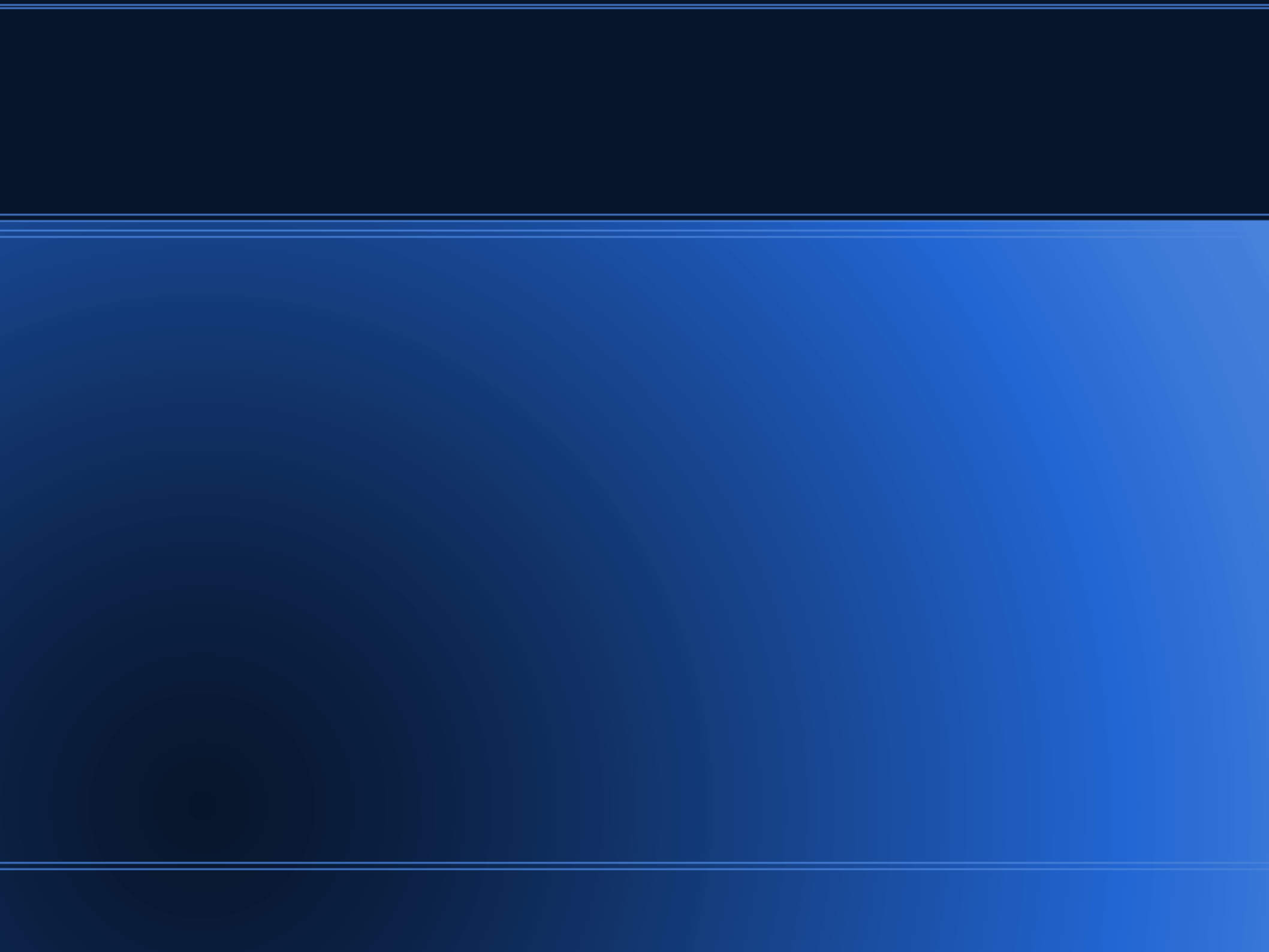
MILD TO MODERATE WEAKNESS
VS
SEVERE WEAKNESS

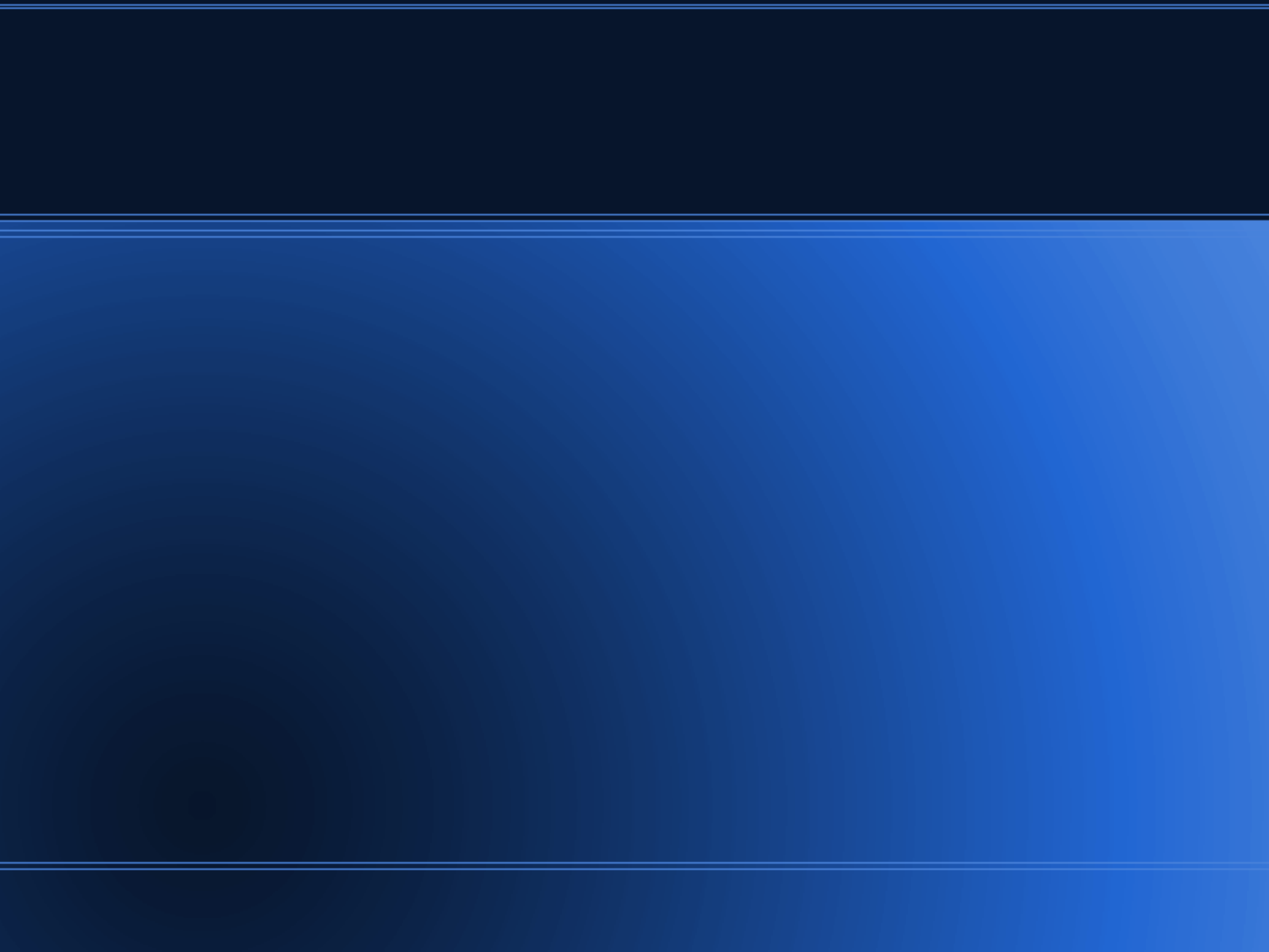
STRETCHING AND RANGE OF MOTION

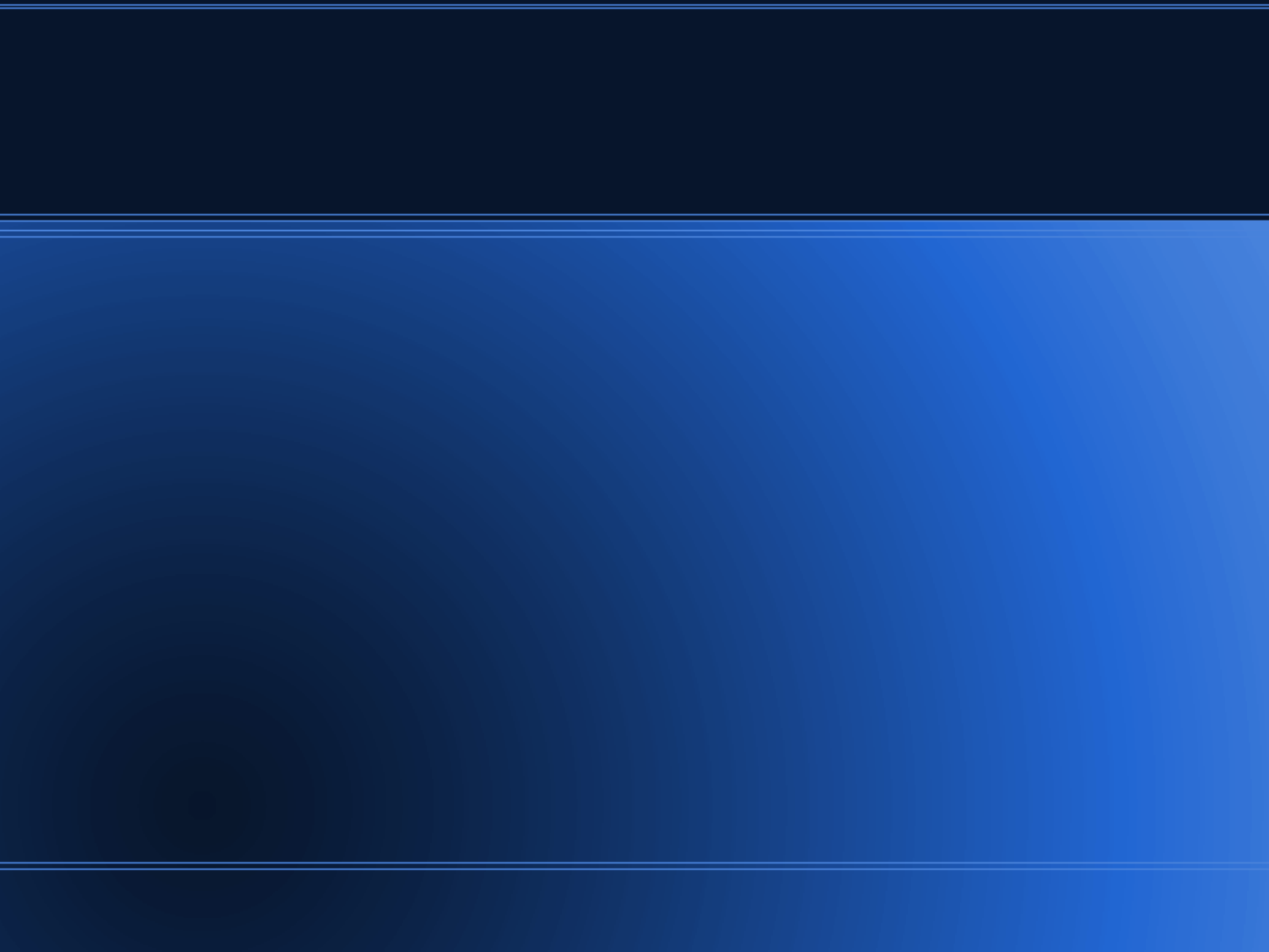
- ❖ Stretching for comfort
- ❖ Avoiding contractures
- ❖ Over stretch – weak muscles
- ❖ Range of Motion (ROM)

Strength Training

- Determining level of resistance
 - Single repetition maximum (SRM)
 - Best guesstimate
 - 50% - 80% or SRM
- 2-3 sets of 10 – 12 repetitions
 - Fatigue







CHALLENGING ACTIVITIES



- Sit to stand
- Stairs
- Picking up objects from floors
- Low / overhead surfaces

Cardiovascular Exercise

❖ TARGET HEART RATE

- 70 – 80% of maximum
- Maximum = $220 - \text{age}$

❖ DURATION / FREQUENCY

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

Monitoring Exertion Levels

- Borg Rating of Perceived Exertion - RPE

rating	description
6	NO EXERTION AT ALL
7	EXTREMELY LIGHT
8	VERY LIGHT
9	
10	
11	LIGHT
12	
13	SOMEWHAT HARD
14	
15	HARD (HEAVY)
16	
17	VERY HARD
18	
19	EXTREMELY HARD
20	MAXIMAL EXERTION

Options for Cardio Exercise

- ❖ Walk / run
- ❖ Equipment
 - ❖ Treadmills / ellipticals
 - ❖ Stationary bikes / steppers
 - ❖ Recumbent options
 - ❖ Arm bikes / ergometers

POOL EXERCISE

- ❖ Safe environment
- ❖ Supportive
- ❖ Resistive
- ❖ Decreased resistance
- ❖ Cardio-vascular



COMBINING STRENGTH AND CARDIO

CIRCUIT TRAINING

45 – 55% SRM

30 seconds exercise

5 – 10 sec rest

New exercise

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



From Wong D.L., Hockenberry-Eaton M., Wilson D., Winkelstein M.L., Schwartz P.: Wong's Essentials of Pediatric Nursing, ed. 6, St. Louis, 2001, p. 1301. Copyrighted by Mosby, Inc. Reprinted by permission.

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 20 -30 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

Exercise and OPMD

Is it safe? -

Yes, with appropriate precautions.

Pacing, moderate level, respect pain.

Why exercise? –

Strengthen, moderate impact of aging and potential other health problems.

Possibly slow progression.

What type? –

Strength and cardio.

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 to wheelchairs

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