

Physical Activities Effect on Diabetes Management

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Disclaimer



I do not have any ties to exercise equipment companies or receive compensation for mentioning name brands.

Objectives

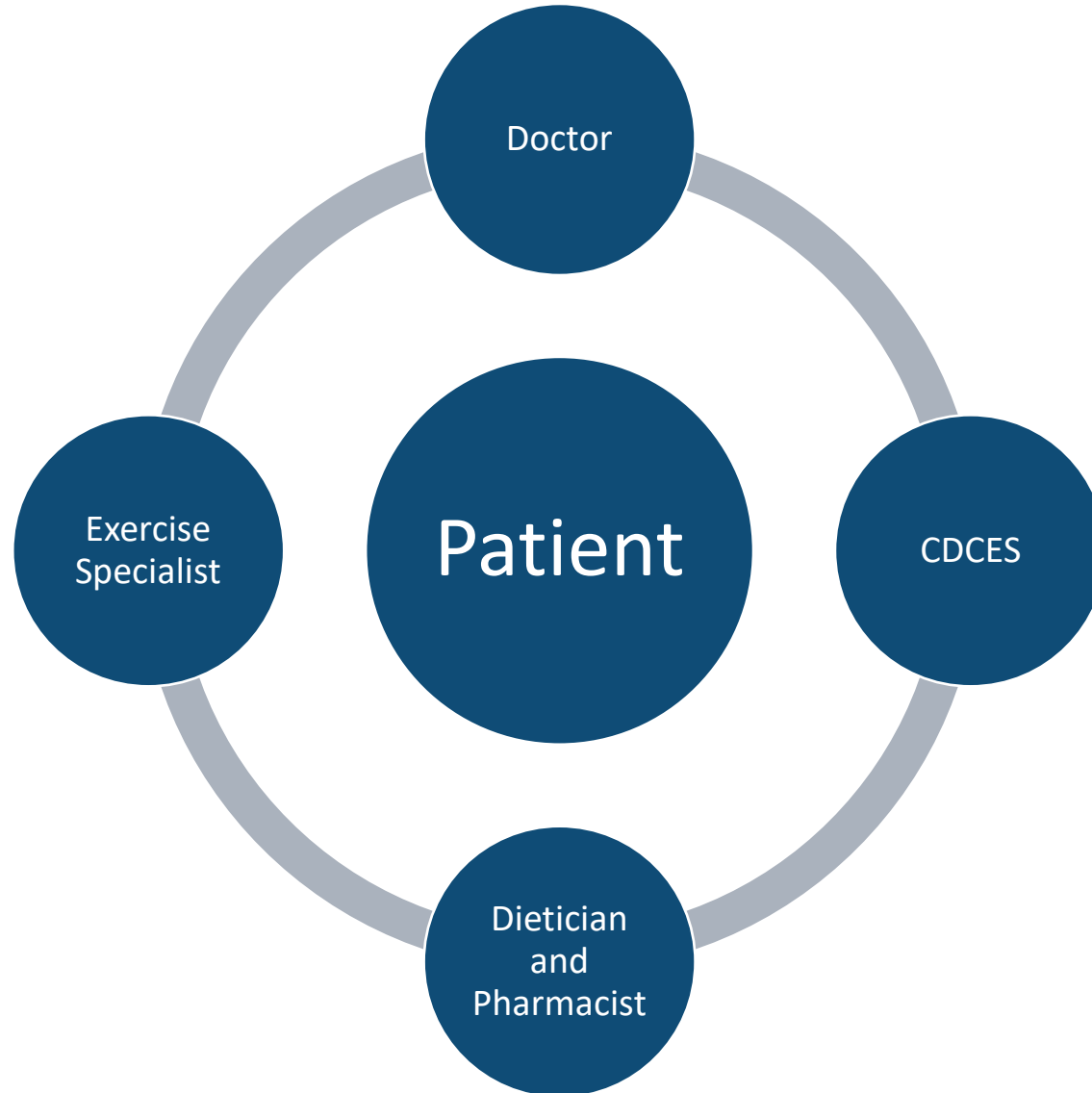


Examine how exercise can be used as a tool to help patients manage their diabetes.

Differentiate between risk vs. reward in regards to prioritizing patient safety during exercise.

Incorporate variety into exercise prescriptions to increase patient buy-in and improve health outcomes.

Work as a Team to Improve Outcomes



- *The goal is to manage diabetes with exercise, diet, and medication.*
- *Keep blood sugar levels in a healthy range*

Exercise Improves Outcomes in Patients Diagnosed with Diabetes

Aerobic exercise is safe and beneficial for:

↑ *Mitochondrial density, insulin sensitivity, oxidative enzymes, compliance and reactivity of blood vessels, lung function, immune function, and cardiac output.*

↓ *A1C, triglycerides, blood pressure, and insulin resistance.*

HIIT promotes rapid enhancement of skeletal muscle oxidative capacity, insulin sensitivity, and glycemic control.

Resistance exercise is safe and beneficial for:

Improves muscle mass, lean body mass, strength, physical function, mental health, bone mineral density, insulin sensitivity, blood pressure, lipid profiles, and cardiovascular health.

Diabetes is an independent risk factor for low muscular strength and accelerated decline in muscle strength and functional status.



Benefits of Exercise for Diabetes Management

- Lowers blood sugar levels and increases insulin sensitivity.
- Helps with weight loss or maintenance.
- Improves cardiovascular health and reduces risk of heart issues.
- Makes you feel good about yourself.
- Lowers the risk of complications.

Exercise Variety



Why introduce variety?

- Exercise variety can help maintain motivation when exercising.
- Help prevent overuse injuries.
- Your body adapts to a stimulus quickly and becomes efficient at a given task. Variety helps by learning new ways to overcome the task.
- Gives you confidence.

Guidelines

- Get your doctors approval before starting an exercise program
- 150 minutes of exercise per week
- 10,000 steps per day
- Strength train 2-3 times per week
- Mobility training most of the days of the week



Initial Intake

- Goals
- Medical history
- Age vs. Training Age
- Previous sports played
- Exercise mode
 - Likes
 - Dislikes



Risk vs Reward



The intake will help guide you to make an informed decision on which exercises to use.

Keep in mind that safety is the top priority when choosing exercises.

Progress from remedial exercise only when the client displays sufficient strength, coordination, and confidence.

Olympic lifts are fun, effective and safe if coached right.

Olympic lifts are also technical and require the client to have sufficient strength, mobility, and mental toughness.

Olympic lifts would have a high risk, and huge reward.

Are they right for your patient? Depends on who you are training, and what their goals are.

What does your body do?

- Push
- Pull
- Hinge
- Squat
- Rotation



Activities of Daily Living

- Standing
- Bending
- Walking/running/jogging
- Picking things up off the floor
- Putting things on shelves, or reaching overhead to get items
- Sitting down/standing up
- Carrying bags/kids/grandkids
- Twisting
- Personal Care



Tools

Free weights

- Barbell
- EZ curl bar
- Dumbbell
- Weighted vest
- Wrist/ankle weights

Machines

- Upper body
- Lower body
- Core

Flat resistance bands

Strength band

Tubes

Stability ball

Medicine Ball

Kettlebell

Sand filled bag

Battle rope

Bosu balance

Plyo boxes

Suspension trainers

Weighted vest



Reps

The number of times you perform an exercise.

- Strength/Power: 1-5 reps
- Hypertrophy: 6-12
- Endurance: 15+
- Changing rep ranges can add variety



Sets

A group of reps.

- 3 sets is pretty standard for exercises that incorporate single and multi-joint lifts.
- 4-5 sets will require lower rep ranges.
- 2 sets work well with endurance and circuit training.
- Changing sets can add variety.



Tempo

Every lift has a concentric phase, pause/no pause, and eccentric phase.

- The tempo can be represented like this, 1:1:1.
- 1 second concentric, 1 second pause, 1 second eccentric.
- Tempo can add variety to your exercise routine.



Rest

Between exercises

- Shorter rest periods
- 0-60 seconds
 - Tabata
 - Circuit
- Medium rest periods
- 60-120 seconds
 - Between sets
- Longer rest periods
- 120 seconds +
 - Max effort/PR



The “must Haves”

- Squat
- Bench
- Deadlift
- Row
- OH lift



Functional Training

Training the body for activities of daily living or sport.

Train movements, not muscles.



Conditioning Exercises

- Farmers carry
- Sled drags/pulls
- Tire flips
- Kettlebell swings*
- Battle ropes
- Barbell Complex*
- Combination exercises*
- Circuit
- Unilateral/Offset training
- Jump rope



Chest



Flat bench with barbell – regular grip – close grip – wide grip

Flat bench with dumbbell – different hand position

- Both DB at same time
- Both DB extended, lower one side while keeping other extended. Repeat on other side.*
- Both DB extended, lower one side while keeping other extended completing all reps on same side. Repeat on other side.*
- Incline bench with barbell – regular grip – close grip – wide grip
- Incline bench with dumbbell – different hand position
- Both DB extended, lower one side while keeping other extended. Repeat on other side.
- Both DB extended, lower one side while keeping other extended completing all reps on same side. Repeat on other side.
- Push up – wall/incline/modified/regular, stability ball*, medicine ball*, hand position*

Back

- Bent over row standing.
- Bent over row kneeling on bench.
- Bent over row standing with landmine*.
- Standing cable/tube row*.
- Prone DB row on incline bench*.
- Renegade row*.
- Alternating bent over gorilla row*.
- Pull down
- Shrugs, barbell, DB, hex bar*.
- Supine bench pull over, barbell, DB



Shoulder

Overhead press

- *Barbell*
- *DB*
 - **Alternating**
- *Landmine press**
- *Lateral raise*
- *Front raise*
- *Arnold press**
- *Upright row*
- *Face pull**



Biceps

Curls

- Barbell
- DB
- Curl bar



Triceps

- Barbell
- DB
- Curl bar
- Suspension trainer*
- Dip



Legs



Squat

- *Back*
 - Box squat – DB, Barbell
- *Front*
 - Barbell, DB, Kettlebell
- *Bulgarian split squat**
- *Pistol squat**

Deadlift

- Romanian Dead Lift (RDL)*

Lunge

- *Front/back/lateral**

Step up

- *Forward/lateral*

Core

Central part of your body.

Involved in posture and stability.

Transfer forces throughout your body.

Tools to train your core:

- Stability ball (SB)
- Medicine ball (MB)
- Cables/tubes/bands
- Barbells/DB
- Landmine

Exercises to train your core:

- Crunch
- Plank
- MB chops*
- SB pass*
- Hyperextension*
- Reverse hyperextension*

Exercises to train your core:

- Paloff press*
- Rope pull with rotation*
- Bridge
- Side plank
- Reverse crunch
- SB skier*



Functional Ways to Monitor Your Strength Program

- Squat depth
- Grip strength
- 1 leg balance test
- Sit to stand
- Sock, shoe balance test
- Push ups

Cardio



Easy

Duration: 30-60 minutes

Intensity: can hold a conversation

Warm up

Work

Cool down

Medium

Duration: 30-45 minutes

Intensity: Hard to hold a conversation

Warm up

Work

Cool down

Hard

Duration: 15-20 minutes

Intensity: No conversation, all work

Intervals

Warm up

Work

Rest: active

Cool down

Ways to monitor exercise intensity

- Talk Test
- RPE
- HR Zone

Splits

- Body part
- Full body
- Upper/lower
- Push/pull/legs
- Circuits
- HIIT
- Remember to give your muscles at least 24-48 hours rest



Putting it together



Full Body

- Monday – Cardio
- Tuesday – UB/LB
- Wednesday - Cardio
- Thursday – UB/LB
- Friday – Cardio
- Saturday – Circuit/Cardio
- Sunday – Rest

Body Part

- Monday – Chest/Abs
- Tuesday – Back
- Wednesday – Legs
- Thursday - Rest
- Friday – Shoulders
- Saturday – Arms/Abs
- Sunday – Rest

Push Pull Leg

- Monday – Push
- Tuesday – Pull
- Wednesday - Legs
- Thursday – Push
- Friday – Pull
- Saturday – Legs
- Sunday – Rest

Push/Pull/Legs

Sets: 3, Reps 8-12, 2:1:1 Tempo

- Monday – Push
- Flat Bench
- Incline Bench
- Pushup
- Skull crusher
- Triceps dip
- Wednesday – Pull
- Row
- Pull up
- Standing 1 arm row
- DB hammer curl
- EZ curl bar curls
- Friday – Legs/shoulders
- Squat
- Deadlift
- Box step up
- OH Press
- Lateral raise



Case Study

- 1998-1999
- Female
- 60-70 year old
- Retired
- Type 2 diabetes
- Morbid obesity (Class III Obesity)
- Insulin therapy
- Goals
- Prescription
- Outcome



Variety at Home



Home workouts don't have to be boring or expensive.

- Look for bargains.
- Make your own equipment.
- Be creative.



Resources

Strength Coaches

- Juan Carlos Santana (not the guitarist)
- Mike Boyle
- Robert Dos Remedios
- Nick Tumminello
- Dan John
- Mark Verstegen
- Jeff Cavaliere
- Dane Miller
- Alwyn and Rachel Cosgrove

Movement Specialist

- Gray Cook
- Stuart McGill

Movement Specialist

- Kelly Starret
- Bob and Brad

Longevity

- Peter Attia

Researchers

- William J Kraemer
- Leonard Kravitz
- Steven J Fleck
- Wayne L Westcott
- Tudor O Bumpa
- Mark Rippetoe
- Cody L Sipes
- Ralph La Forge

Shoutout's

4D Media – fast, cheap, and easy

- Shondiin Cardenas
- Michelle Hayes
- Stuart Noble
- Marcia Yazzie

Partners for Wellness (P4W)

- Dominic Damon
- Justin Shorty

My Brother Anthony “Tony” Price – always pushing me to learn more

Dr. Rob Schurrer – starting me on this lifelong journey





Thank You!

Believe in yourself since no one else will. Sasquatch

