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Working with Clients Who Have Diabetes or Prediabetes: What You Really Need to Know Medical Fitness Network Webinar April 11, 2017

Course Type: Recorded 1 Hour Webinar

Course Level: All Levels

Course Objectives

1. Describe the types of diabetes, monitoring and managing glucose, and how diabetes affects a client physically, mentally, and emotionally.
2. Discuss how exercise affects blood glucose.
3. Describe the kind of exercise beneficial for diabetics, and exercise guidelines for diabetics.
4. Discuss motivation challenges for the diabetic client.

Course Description

Working with clients with diabetes or prediabetes? You probably already are, even if you don't know it. At least 1 in 3 American adults has one of these conditions currently, and the numbers are only increasing. Need to know what to do and not do with such clients? This is the webinar for you! Learn the basics about appropriate activities, medications, and health issues that you really should know when training clients with type 1, type 2 or gestational diabetes, along with anyone at risk for type 2 diabetes (prediabetes).

About the Presenter

Sheri R. Colberg, PhD, FACSM, is a Professor Emerita of Exercise Science at Old Dominion University and a former Adjunct Professor of Internal Medicine at Eastern Virginia Medical School. A graduate of Stanford, University of California, Davis, and Cal Berkeley, she is an internationally recognized authority on diabetes and exercise. She has led the way in shaping physical activity guidelines for many professional organizations, including the American Diabetes Association, American College of Sports Medicine, and American Association of Diabetes Educators.

Course Outline

Do your clients have diabetes or prediabetes?
Does it matter if your clients have diabetes?

Diabetes and prediabetes can affect your clients in many ways:

- Overall health
- Ability to be active (safely, effectively)
- Physical responses to activity
- Mental/emotional responses
- Likelihood of injury

Motivation
And much more...

What is blood glucose ("blood sugar")?

- Simple carbohydrate in blood
- Most comes from food
- Also produced by liver
- Critical for brain, nervous system
- Glucose-raising hormones released if goes too low

What is insulin?

- Hormone from the beta cells of the pancreas
- Lowers blood glucose (the only hormone that does)
- Pancreas: organ that makes and releases insulin

What is diabetes?

- **Type 1 diabetes**
- **Type 2 diabetes**
- **Prediabetes**
- Gestational diabetes mellitus

What is type 1 diabetes?

Type 1 diabetes:

5-10 percent of U.S. cases

Loss of pancreatic beta cells through autoimmune destruction

Onset more common in youth (but can occur at any age)

Must replace insulin (inject, pump, inhale)

What is type 2 diabetes?

Type 2 diabetes:

90-95 percent of U.S. cases

Insulin resistance, some loss of insulin production

Most common onset in adulthood (but increasing in younger)

May or may not take insulin

What is prediabetes?

Prediabetes:

Almost 1 in 4 adults has prediabetes

Blood glucose levels not in a "diabetic" range yet, above normal

Puts them at high risk for developing type 2 diabetes

How do clients monitor blood glucose?

Monitoring is your clients' responsibility, but encourage it!

Why does blood glucose (sugar) matter?

- Affects exercise training and performance
- During exercise, carbs are a primary fuel
- "Hit the wall" if run out of glycogen
- Develop hypoglycemia if blood glucose drops

How does exercise affect blood glucose?

- Most moderate or prolonged physical activity lowers blood glucose
- Muscles use blood glucose as fuel
- Insulin promotes uptake as well
- Some carbs may be needed

Why does exercise make it go up sometimes?

- Exercise intensity high
- Starting blood glucose elevated
- Lack of insulin in body
- Recent food intake

What type of exercise is best for diabetes?

- Aerobic/Cardio
- Balance
- Flexibility
- Resistance

Why focus on muscle mass?

Normal Muscle Tissue

Inactive Muscle Tissue

Why is resistance training critical?

- Normal loss of muscle mass with aging
- Diabetes accelerates loss of muscle
- Carbohydrate storage tank
- **2-3 nonconsecutive days per week recommended**

Who should do balance training?

Any balance exercises may prevent falls

Especially for over 40, peripheral neuropathy

All lower body strength exercises improve balance

It can be simple to practice daily:

Stand on one leg, hold on with 1–2 hands

Try with eyes open/closed

What else is important to include?

- **Cardio training** for fitness, weight management
- **Flexibility training** to lower falls, prevent injuries
- **Combined training** programs for optimal health
- Find an activity that is fun and stick with it!

What causes people to stop exercising?

- Perceived lack of time
- Start out at too high intensity
- Exercise-related injuries
- Demotivation

Why are injuries more common in diabetes?

- Glucose “sticks” to collagen, joint surfaces
- Greater incidence of overuse injuries
- Body weight/arthritis issues
- Use of diabetes and other medications

How can injuries be prevented?

- Proper warm-up and cool-down
- Appropriate exercise intensity to start
- Slow progression over time/adequate rest
- Cross-training/variety of activities

What are the barriers to being active?

- Fear of hypoglycemia (insulin users)
- Physically inactive/sedentary lifestyle
- Presence of diabetes complications
- Other environmental barriers

How quickly should your clients progress?

Depends on your clients’:

- Age
- Prior fitness/activity level
- Fitness/health goals
- Diabetes management
- Physical limitations/health concerns

Err on the side of caution: start slowly, progress slowly!

What about Burpees, CrossFit, HIIT training?

Burpees are not a good place to start with most clients with diabetes!

For all these activities:

- Medical clearance prior to participation
if sedentary, have CV risk factors
- Establish foundational level of fitness first
- Introduce slowly (1 day per week)

What else is important to know?

- Not every day is the same physically or mentally with diabetes
- Expect some good days and some bad ones
- Have contingency plans/workouts planned
- Make adjustments as needed during sessions
- Err on the side of caution

Can people exercise with complications?

Yes, but with appropriate precautions

Common complications:

- Heart disease/peripheral artery disease
- Hypertension (high blood pressure)
- Elevated blood fats/CV risk
- Peripheral neuropathy (loss of sensation in feet)

Arthritis/joint limitations

Why is exercise like a dose of medicine?

What should everyone be doing?

- Get moving with aerobic activities
- Work on getting and staying strong
- Flex joints daily to stay limber
- Practice staying on their feet
- Move more all day long
- Don't sit for too long at one time
- Fit physical activity in every single day

Get more SPA time?

Definitely...when "SPA" stands for *spontaneous physical activity*

How can you learn more? (Free information)

www.DiabetesMotion.com

Become a diabetes specialist!

A 3-level (beginner, intermediate, and advanced) program is available online for fitness professionals through the *Diabetes Motion Academy*

www.dmacademy.com

References/Resources

- Colberg SR, et al. Physical activity/exercise and diabetes: a position statement of the American Diabetes Association. *Diabetes Care*, 35(11): 2065-2079, 2016
(<http://care.diabetesjournals.org/content/39/11/2065>)
- Colberg, SR. *Exercise and Diabetes: A Clinician's Guide to Prescribing Physical Activity*. Alexandria: American Diabetes Association, 2013.

Question and Answer Segment