OCTOBER 2020 WM DPG RESEARCH BRIEFS

The purpose of the monthly Research Brief is to provide members with recently published, peer-reviewed weight management research to introduce new evidence-based and emerging research findings.

Which weight management intervention components cost-effectively facilitate weight loss?
Spring B., Pfammatter A., Marchese S., et al.
Journal: Obesity
Published: September 2020
Issue: Vol. 28, No. 9
To read the article in full: https://doi.org/10.1002/oby.22915 (Open Access)

Key Points:

- 562 adults with BMI≥25 were included; 84% completed measurements at six months.
- Core intervention components were provided to all individuals: Opt-IN smartphone app with personalized goals for diet, physical activity (PA), weight, and online sessions based upon DPP; online self-monitoring of foods/beverages, PA and weight. Goals were 7% weight loss, calories and fat (g) intake (per DPP), 300 minutes moderate-vigorous PA.
- Components which varied were coaching calls (12 vs 24 calls), primary care provider (PCP) progress reports (yes/no), text messages (yes/no), meal replacement recommendations (yes/no), and buddy training (yes/no).
- The most effective treatment combination (≤$500) included 12 coaching calls, buddy training, and primary care provider progress reports.
- Weight loss with this combination was predicted to be 6.1 kg in 6 months, with a program cost of $427 per person.

Editor's Note:
The Optimization of Remotely Delivered Intensive Lifestyle Treatment for Obesity (Opt-IN) study tested the effectiveness of five treatment components, and combinations of those components, for producing weight loss over six months. A goal was to develop a combination of effective treatments that could be delivered remotely for ≤$500; this dollar amount is considered reasonable by the CDC and commercial insurers for delivering the Diabetes Prevention Program (DPP) to individuals.

What exercise prescription is optimal for improving body composition, cardiorespiratory fitness, and metabolic health in adults with obesity?

O'Donaghue G., Blake C., Cunningham C., et al.

Journal: Obesity Reviews
Published: (Online) September 8, 2020
To read the article in full: **https://doi.org/10.1111/obr.13137** (Open Access)

Key Points:

- This meta-analysis included 45 studies, with a total of 3,566 individuals.
- Only randomized controlled trials in adults with obesity, with exercise as the sole intervention strategy were included. The time frame was ≥8 weeks.
- Exercise was categorized as aerobic (moderate or vigorous intensity), resistance training [RT](high or low/moderate load), "combined high" (vigorous aerobic+high-load RT), "combined low/moderate" (low/moderate intensity aerobic+low/moderate load RT), or no exercise (control).
- Overall, weight loss with exercise ranged 0.05-1.01 kg; those with an aerobic component (combination or alone) were more effective than those with RT alone.
- The "combined high" prescription was most likely to reduce % body fat and increase VO_{2max}, and "combined low/moderate" was most likely to reduce waist circumference.

Editor's Note:

Current exercise guidelines for individuals with obesity are focused on weight loss outcomes. This meta-analysis investigated the effectiveness of exercise prescriptions for improving body composition, cardiorespiratory fitness, and metabolic risk factors in adults with obesity. Details about each exercise category were provided in a table (frequency, intensity, type, etc). The number of studies available for assessment of metabolic health was inadequate, so this aspect of the analysis could not be included. More than half (33 of 45 studies) of the studies had a high or moderate risk of bias.

Is "metabolically healthy" overweight or obesity associated with increased risk of CVD or all-cause mortality?

Opio J., Croker E., Odongo G., et al.

Journal: Obesity Reviews
Published: (Online) September 1, 2020
To read the article in full: **https://doi.org/10.1111/obr.13127** (Open Access)

Key Points:

- This meta-analysis included 23 prospective cohort studies, with a total of 4,492,723 adults.
- Outcomes included CVD events (fatal and non-fatal) and all-cause mortality.
- Risk was compared among individuals with metabolically healthy and unhealthy overweight or obesity, relative to metabolically healthy normal weight (MHNW) individuals. Individuals did not have pre-existing CVD, type 2 diabetes, cancer, or chronic kidney disease.
- CVD risk was increased in metabolically healthy overweight (RR 1.34) and obesity (RR 1.58) groups, compared to MHNW.
- Increased CVD risk was also evident among those with no metabolic risk factors.

Editor's Note:

The authors of this meta-analysis classified individuals as metabolically healthy or unhealthy using a variety of methods, which is a strength - what constitutes "metabolic health" is debated. "Metabolic health" criteria included the absence or presence of $\leq$1 or $\leq$2 conditions used to define the Metabolic Syndrome: blood pressure, blood triglyceride and HDL-cholesterol concentrations, fasting glucose concentrations, and waist circumference. Risk was similar regardless of how "metabolic health" was defined. Previous reviews have suggested that differences in physical activity and/or cardio-respiratory fitness may, in part, explain these findings.