Cardiovascular and diabetes risk in firefighters
…and hormone Q & A

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Cardiovascular health and fitness of firefighters

• Cardiovascular disease is leading cause of death in on-duty firefighters

• Cardiovascular risk factors are prevalent
  Study of 947 male and 76 female Colorado firefighters found:
  – Obesity: 11% of women (23% of men)
  – Hypertension: 31% of women (51% of men)
  – 49% did not meet minimum fitness level
  – Hyperglycemia<2%
Increased risk of sudden cardiac death in firefighters related to work conditions

These stressors likely give rise to other health risks
Cardiometabolic risk

• Low cardiorespiratory fitness $\rightarrow$ increased risk of cardiac events
  – Priority: maintain fitness

• Night shift work, stress, and sleep deprivation $\rightarrow$ increased intake of calorie-dense foods, obesity

• Obesity plus family history/genetic risk $\rightarrow$ increased diabetes risk
Risk for type 2 diabetes increases with body weight

Effect of body mass index in women

Age-adjusted RR (%) of Developing diabetes over 14 yr in women aged 30-55 in 1976

Overweight 34%
Obese 31%

Attained BMI

NHS. Ann Int Med 1995;122:481
Health promotion

• Maintain fitness / wellness

• Treat and address risk factors
  – Smoking
  – High blood pressure
  – Overweight/obesity
  – Diabetes/pre-diabetes
Comprehensive Lifestyle Program

• Reasonable, Achievable Goals
• Starts with basic education
  – Nutrition
  – Activity
• Self-Monitoring
  – Accountability
• Problem Solving
• Behavioral Issues
• Managing High-Risk Situations
  – Holidays
  – Emotions and Hunger
Lessons from lifestyle intervention

What is lifestyle intervention?
An intensive program with the following specific goals in overweight people with pre-diabetes:

- > 7% loss of body weight and maintenance of weight loss
- > 150 minutes physical activity per week
Mean Weight Change in the Diabetes Prevention Program

The DPP Research Group, *NEJM* 346:393-403, 2002
Diabetes Prevention Program

All participants

Lifestyle: 58% reduction

Placebo (n=1082)
Metformin (n=1073, p<0.001 vs. Plac)
Lifestyle (n=1079, p<0.001 vs. Met , p<0.001 vs. Plac)

Metformin: 31% reduction
Lifestyle: 58% reduction
Lessons

• Modest weight loss yields health benefits, including diabetes prevention

• Sustainable behavioral strategies lead to success, rather than “diets”
  – Noom
  – Omada

• Ongoing studies of Mediterranean diet in firefighters
Mindfulness and health

- Mindful eating
  - Fights PTSD
  - Helps regulate emotions
- Lowers blood pressure
  - Fights depression
  - Fights anxiety
Thank you!

• Thank you for your work!

• Take care of yourselves
  – Mental health
  – Weight maintenance
  – Cardiovascular and diabetes risk reduction
Q & A

• Diet and exercise
• Other endocrinology topics
  – Thyroid conditions
  – Osteoporosis
  – Menopause
3 – 4 – 5 Method

Breakfast  300 cals
Snack      100 cals
Lunch      400 cals
Dinner     500 cals
Snack      100 cals
TOTAL      1400 cals