Learning Objectives

1. Understand available evidence-based research related to successful adult weight loss
2. Discover how to utilize available resources to assist in providing information and education for the unique long term health care needs of this population
3. Be able to implement practical tips for positive healthy changes

Weight Classifications by BMI Level

- <18.5 = Underweight
- 18.5–24.9 = Normal weight
- 25–29.9 = Overweight
- ≥30 = Obese
- ≥40 = Extremely Obese

Adult Obesity in the U.S. 2011-2012

- 34.9% Obese
- 68.6% Overweight or Obese

Adult Obesity Rate by State, 2014

Graphic from http://stateofobesity.org/obesity-rates-trends-overview/
**Prevalence of Obesity by Age Group**

- >65 years: 34.6%
- 65-74 years: 40.8%
- >75 years: 27.7%

NHANES

Obesity rates are 26% higher among middle-age adults than younger adults:
- 30% of 20-39 y/o vs.
- nearly 40% of 40-59 y/o

Trust for America’s Health

Steady increase in recent decades, and expected to continue to rise

Clin Geriatr Med 2015

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**Younger, Obese Adults in LTC**

The numbers of severely obese patients in LTC facilities are increasing

Some have impaired ability to complete ADLs because of weight

Mobility can be an issue, even for the younger obese

These people may be better candidates for comprehensive MNT for weight loss than older adults

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**The Cost of Obesity**

The annual medical cost of obesity was ~$147 billion in 2008 U.S. dollars

- Medical costs for people who are obese were $1,429 higher than those of normal weight (1)
- $1,700 higher per beneficiary for Medicare (2)

1. www.cdc.gov/obesity/data/adult.html

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**Obesity in Nursing Facilities**

- 25.8% of newly admitted adults were obese (BMI ≥30) in 2009
  - Up from 16.9% in 1999
  - Based on MDS data

- 23.9% of NH residents had BMIs >35 in 2010
  - Up from 14.7% in 2000

1. Obesity and pressure ulcers among nursing home residents. Mod Care 2013.

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**Obesity and its Relationship to Mortality, Morbidity and Costs**

Worldwide epidemic with significant negative impact on health, mortality and related costs

- Associated with increased prevalence of diabetes, CVD, HTN and some cancers

- Associated with kidney disease, stroke, osteoarthritis and sleep apnea

- Obesity significantly increases risk of death

http://www.ncbi.nlm.nih.gov/books/NBK44206/

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**Waist Circumference**

Increased obesity-associated risk factors in most adults with a BMI of 25 to 34.9 and a waist circumference of:

- >40” (Men)
- >35” (Women)

A large belly in mid-life has been shown to increase risk of some of the leading causes of preventable death:
- Coronary heart disease
- Diabetes
- Stroke (CDC)
- Dementia (NIH)
- Increased mortality*

Chronic Disease in Older Adults

- 92% have at least 1 chronic condition; 77% have at least 2 [1]
- 86% of the nation’s health care spending in 2010 was for people with 1 or more chronic disease [2]
- 24% of people >65 y/o are diagnosed with DM [3]

1. National Council on Aging
2. CDC: Chronic Disease Prevention and Health Promotion

Obesity, Inactivity and Aging

Each are independent risk factors that may lead to metabolic changes that result in CVD and impaired glucose intolerance

- Obesity contributes to loss of function which reduces independence
- Sarcopenic obesity (loss of muscle mass/strength coupled with obesity) → progression of impaired function

Starr and Bales. Excessive Body Weight in Older Adults: Concerns and Recommendations. Clin Geriatr Med. 2015

Metabolic Syndrome in the U.S.

~35% of adults estimated to have Met S in 2011-2012

Prevalence increases with age:

- 18.3% for 20-39 y/o
- 46.7% for >60 y/o
  - >50% of women and Hispanics in this age group have Met S

JAMA, May 2015

Met S increases risk chance for CVD and other health problems such as DM, stroke.

Risks and Benefits of Weight Loss for Older Adults

Benefits of Weight Loss in Older Adults

Intentional weight reduction in obese older people improves the cardiovascular risk profile, reduces chronic inflammation and is correlated with an improved quality of life


Weight Management in Older Adults with CVD

Should aim to improve and maintain physical function and quality of life

Rather than prevent medical problems associated with obesity (as in younger and middle aged patients)

The Obesity Challenge: Aging, Obesity and Long Term Health Care

The Obesity Paradox

In recent years research has questioned the health risks of obesity in older adults:

- Older adults who are overweight are less likely to die over a 10 year period than those in the “normal” weight range (1)
- Obesity can appear protective among individuals with CVD (2)

In acute and chronic heart failure, overweight and mild to moderate obesity is associated with improved survival (3)

Adults of normal weight have higher mortality risk than obese patients with type 2 diabetes (4)


Can Older Adults Benefit from Being Overweight?

There may be a protective effect for seniors associated with being slightly overweight

As a result of excess nutritional reserves, overweight seniors may be more likely to:
- Survive acute illnesses
- Handle stress better
- Recover more quickly from traumas

Overweight, Obesity and Mortality

Based on analysis of 97 studies of 2.88 million people:

- Being overweight was associated with the lowest mortality in older adults (and across all age groups)
- Obesity was not associated with higher mortality in older adults - but was associated with higher mortality at all other ages

Flegal, Kit, Graubard. JAMA. 2013

- Use of sterols?
- Better prevention/management of HTN, DM
- Other?

Is Overweight Protective Only in Older Adults with High Muscle Mass?

637 study participants ages 66-96

- Thigh muscle CT scans
- Median f/u 6.66 years
- Highest mortality in those with low muscle mass whether normal or overweight
- Elevated mortality risk in normal weight participants compared to overweight


For Adults/Older Adults Who are Appropriate for Weight Management

Use the evidence and resources available to help reduce/control levels of obesity and its disease related complications

The Evidence for Adult Weight Management

Results of the Adult Weight Management Update Evidence Analysis Project, Academy of Nutrition and Dietetics

http://www.andeal.org/topic.cfm?menu=5276&cat=4688

Accessed 5/4/16
Criteria for Recommendation Rating

Statement Rating (Grade based on evidence)

- **Strong**: Should follow these recommendations
- **Fair**: Should generally follow these recommendations
- **Weak**: Be cautious in applying
- **Consensus**: Be flexible in deciding whether to follow
- **Insufficient Evidence**: Use clinical judgment

Evidence Supports...

Weight loss for adults who are overweight or obese to reduce:

- Risk factors for DM and CVD
- BP in both hypertensive and pre-hypertensive individuals
- BG in persons with DM and pre-diabetes
- HbA1C in type 2 diabetes
- Serum triglycerides
- Total serum cholesterol
- LDL cholesterol

Comprehensive WM Program

Medical nutrition therapy provided by a registered dietitian nutritionist is recommended for overweight and obese adults and results in both statistically significant and clinically meaningful weight loss, as well as reduced risk for diabetes, disorders of lipid metabolism and hypertension

Rating: Strong, Imperative

For weight loss, the registered dietitian nutritionist should schedule at least 14 MNT encounters over a period of at least six months.

High-frequency comprehensive weight loss interventions result in weight loss

Rating: Strong, Imperative

Comprehensive WM Program

The combination therapy is more successful than using any one intervention alone

Rating: Strong, Imperative

The RDN should collaborate with the individual regarding a realistic weight loss goal, such as:

- up to 2 pounds/week
- up to 10% of baseline body weight, or
- 3% to 5% of baseline body weight if cardiovascular risk factors are present

These goals are realistic, achievable, and sustainable

Rating: Strong, Imperative
**Comprehensive WM Program**

If indirect calorimetry is available, the RDN should use a measured resting metabolic rate to determine energy needs in overweight or obese adults. If indirect calorimetry is not available, the RDN should use the Mifflin-St. Jeor equation using actual weight to estimate resting metabolic rate (RMR) in overweight or obese adults.

**Rating: Strong, Conditional**

© Academy of Nutrition and Dietetics Evidence Analysis Library 2014

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**Reduced Calorie Diets**

The RDN should prescribe an individualized diet, including patient preferences and health status, to achieve and maintain nutrient adequacy and reduce caloric intake, based on caloric reduction strategies:

- 1200-1500 kcal/day for women
- 1500-1800 kcal/day for men, or
- Energy deficit of ~500-750 kcal per day, or
- Evidence-based diets that restrict certain foods in order to create an energy deficit by reduced food intake.

**Rating: Strong, Imperative**

© Academy of Nutrition and Dietetics Evidence Analysis Library 2014

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**Meal Replacements/Portion Control**

The registered dietitian nutritionist should recommend portion control and meal replacements or structured meal plans as part of a comprehensive weight management program. The use of various types of meal replacements or structured meal plans is helpful in achieving health and food behavior change.

**Rating: Strong, Imperative**

© Academy of Nutrition and Dietetics Evidence Analysis Library 2014

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**Eating Frequency and Patterns**

The registered dietitian nutritionist should individualize the meal pattern to distribute calories at meals and snacks throughout the day, including breakfast.

Research reports inconsistent results regarding the association between eating frequency and body weight, which may be due to the role of portion size.

**Fair: Imperative**

© Academy of Nutrition and Dietetics Evidence Analysis Library 2014

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**Specific Diets and Nutrients**

The registered dietitian nutritionist should advise overweight or obese adults that as long as the target reduction in calorie level is achieved, many different dietary approaches are effective.

There is strong and consistent evidence that when calorie intake is controlled,
- macronutrient proportion,
- glycemic index and glycemic load of the diet are not related to losing weight.

**Rating: Strong, Imperative**

© Academy of Nutrition and Dietetics Evidence Analysis Library 2014

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**Health Benefits of Physical Activity: Strong Evidence for Adults/Older Adults**

Lower risk of:
- Early death
- Heart disease
- Stroke
- Type 2 diabetes
- High blood pressure
- Adverse blood lipid profile
- Metabolic syndrome
- Colon/breast cancers

Prevention of weight gain:
- Weight loss when combined with diet
- Improved cardiorespiratory and muscular fitness
- Prevention of falls
- Reduced depression
- Better cognitive function (older adults)

**Physical Activity**

- Physical activity less than 150 minutes per week promotes minimal weight loss
- Physical activity more than 150 minutes per week results in modest weight loss of approximately 2 to 3 kg
- Physical activity of more than 225 to 420 minutes per week results in 5 to 7.5 kg weight loss, and a dose–response exists

*Rating: Consensus, Imperative*

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**Physical Activity**

- Should be part of a comprehensive weight management program
- Physical activity level should be assessed and individualized, and long term goals established to accumulate >30 min of moderate intensity physical activity on most, if not all days of the week, unless medically contraindicated

*Rationale:*
- Physical activity contributes to weight loss, may decrease abdominal fat, and may help with maintenance of weight loss

*Rating: Strong, Imperative*

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**Multiple Behavior Therapy Strategies**

- The RDN should incorporate one or more of the following strategies for behavior therapy:
  - Self monitoring
  - Motivational interviewing
  - Structured meal plans, meal replacements and/or portion control
  - Goal-setting

*Rating: Strong, Imperative*

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**FDA-Approved Medications for Weight Loss**

- FDA approved weight loss medications may be part of a comprehensive weight management program
  - Dietitians should collaborate with other members of the health care team regarding the use of *FDA approved weight loss medications* for people who meet the NHLBI criteria. (BMI>30 with no obesity related risk factors or diseases; Or BMI 27-29.9 with obesity related risk factors and diseases)
  - Research indicates that pharmacotherapy may enhance weight loss in some overweight and obese adults

*Rating: Strong, Imperative*

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**Advising Adults and Older Adults on Safe and Effective Weight Loss**

That may pose a public health concern:
- Vitamin D, calcium, potassium, and fiber
- And iron for adolescent and premenopausal females

Based on estimated average requirement (EAR) these nutrients are underconsumed:
- Vitamins A, E, C, folate, and magnesium; iron for pregnant females

*Note: B12 may also be a concern in elderly*


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The Total Diet or Overall Pattern

Of food eaten is the most important focus of healthy eating
- All foods can fit within this pattern if consumed in moderation with appropriate portion size and combined with physical activity
- Emphasize a balance of food and beverages within energy needs, rather than any one food or meal
- Focus on variety, moderation, and proportionality in the context of a healthy lifestyle, rather than targeting specific nutrients or foods

Position of the Academy of Nutrition and Dietetics: Total Diet Approach to Healthy Eating, 2013

Recommended Dietary Patterns

- USDA Food Patterns
- DASH-style diets
- Mediterranean-style diets
- Healthy Vegetarian Food Pattern created for the 2015 DGA

Scientific Report of the 2015 DGAC:

Healthy Dietary Patterns

<table>
<thead>
<tr>
<th>Higher</th>
<th>Lower in red and processed meat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low in sugar-sweetened foods and drinks and refined grains; saturated fat, added sugars, and sodium</td>
<td>General population:</td>
</tr>
<tr>
<td>- &lt;2,300 mg dietary sodium/day (&lt;1500 mg for pre-hypertension)</td>
<td></td>
</tr>
<tr>
<td>- Less than 10% of total kcal from saturated fat/day</td>
<td></td>
</tr>
<tr>
<td>- Maximum of 10% of total calories from added sugars/day</td>
<td></td>
</tr>
</tbody>
</table>

Scientific Report of the 2015 DGAC:

Any Number of “Diets” Work

As long as energy is restricted to promote weight loss:
- Higher protein
- Moderate protein
- Low-calorie
- Low-carbohydrate
- Low-fat
- Lower fat
- AHA-style diets
- Lacto-ovo vegetarian
- Mediterranean-style diet
- Low-glycemic load


Nutrient Adequacy

Lower overall energy intakes to match energy needs
- Replace energy dense foods with nutrient dense vegetables, fruits, whole grains, fluid milk/products to increase shortfall nutrients
- Choose foods that limit intake of saturated and trans fats, cholesterol, added sugars, salt, and alcohol

- Seafood twice a week
- More beans, other plant based sources of protein
- Lean meat, poultry
- Low fat dairy

Alcohol

Average daily intake of 1-2 alcoholic beverages is associated with the lowest all cause mortality and low risk of DM and CHD among middle aged and older adults

Positive association between excess alcohol and risk of unintended injuries, breast/colon cancer

**Alcohol: If you drink...**

Women:
Up to 1 drink/day

Men:
Up to 2 drinks/day

One drink equals:
- 12 oz. regular beer
- 5 oz. wine
- 1 oz. distilled spirits

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**Challenges to Successful Obesity Treatment in Older Adults**

- Eating habits are well-established
- Metabolism declines with aging
  - Fewer calories are needed to maintain weight
  - Calorie restriction to result in weight loss can be difficult to achieve
- Food is readily available everywhere
- Ability to taste and smell has changed (may want sweet and salty foods)

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**Is Weight Loss Appropriate for Older Adults Who are Obese?**

Will weight loss reduce risk for other complications?

Will weight loss prolong life?

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**Is Weight Loss Appropriate for Older Adults Who are Obese?**

What are the risks associated with obesity treatment?

Will a restricted diet reduce ability to consume adequate nutrients to maintain health?

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**Safety of Weight Reduction**

Must be the priority to avoid:

- Loss of lean body mass or bone mass
- Vitamin/mineral deficiencies
- Other complications

Any attempt at planned weight loss must be carefully planned and supervised

- Proper nutrition counseling
- Close monitoring of body weight and other nutritional parameters

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**Which Older Adults are Not Candidates for Weight Loss?**

- People who don’t want to lose weight
- Frail elderly
- People with dementia
- Hospice patients
- People who are malnourished
  - Malnutrition increases morbidity/mortality, decreases function/quality of life

General Nutrition Strategies for Healthy Older Adults

Educate on Dietary Guidelines
- Provide recommendations for consumption of nutrient-dense foods/beverages
- Provide recommendations to limit intake of sodium, solid fats, added sugars and refined grains that can contribute to disease risk
- Provide info on healthy diet patterns

Practice Paper of the Academy of Nutrition and Dietetics: The Role of Nutrition in Health Promotion and Chronic Disease Prevention, 2013

General Strategies for Healthy Older Adults

Make half the plate fruits and vegetables and using a wide variety of fruits and veggies
Make half your grains whole grains
Vary protein choices, choosing lean protein sources, eggs, nuts, and seeds (as appropriate for individual)
Choose calcium-rich foods, focusing on lower-fat dairy foods (as appropriate for individual)

Practice Paper of the Academy of Nutrition and Dietetics: The Role of Nutrition in Health Promotion and Chronic Disease Prevention (July 2013)

Optimal Protein Intake - Older Adults

Positive association between protein ingestion and muscle mass
PORT-AGE study group, JAMDA 2013

Protein spread equally between breakfast, lunch, dinner (30 g each)
Paddon-Jones 2009

Physical Activity for Older Adults

Fairly consistent evidence
In older adults with existing functional limitations, regular physical activity is safe and has a beneficial effect on functional ability

Consistent evidence
Physically active adults and older adults have better quality sleep and health-related quality of life

Strong evidence
For older adults at risk of falling, regular physical activity is safe and reduces falls by about 30%

Scientific Report of the 2015 DGAC

Encourage an Active Lifestyle

- At least 150 minutes of moderate intensity aerobic activity (eg, brisk walking) every week, and
- Muscle strengthening activities on >2 days/week that work all major muscle groups (legs, hips, back, abdomen, chest, shoulders and arms)

Practice Paper of the Academy of Nutrition and Dietetics: The Role of Nutrition in Health Promotion and Chronic Disease Prevention, 2013

Physical Activity for Older Adults

Older adults generally have lower exercise capacities than younger persons
Inactive, sedentary older adults may need a physical activity plan that is of lower intensity and amount

**Benefits vs Risks**

Must look at each individual
- Age
- Gender
- Race/ethnic group
- Smoking
- Disease burden – key issue
- Body composition – key factor

Elevated BMI may have no protective effect in the presence of reduced muscle mass (sarcopenic obesity)

G Jensen presentation on aging and obesity for - National Academy of Sciences, 2015

In some cases, maintaining an older adult’s usual body weight may be more appropriate than attempting a weight loss plan

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**Steps to Successful Nutrition Care for Older Adults**

1. **Nutrition Screening/Assessment**
2. **Individualized Nutrition Care**
3. **Person Centered Approach**

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**Validated Screening Tools**

- **MST**
- **MNA**
- **MUST**
- **SNAQ**

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**Comprehensive Nutrition Assessment and Care Plan**

Indirect calorimetry or Mifflin-St. Jeor equation for calculation of caloric needs in healthy adults

Protein needs vary, but need higher percentage of protein as calories decline

Fluids vary but general recommendation is 1 mL/kcal consumed

Apply formulas consistently

Refer to RDN for Comprehensive Nutrition Assessment

Follow the Nutrition Care Process (Assessment, Diagnosis, Intervention, Monitoring/Evaluation)

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**Weight Loss: Obese <80 Years**

Must include aerobic and resistance exercises to protect LBM and preserve muscle function

- LBM loss can be >25% of total weight loss
- Slight reductions in bone mineral density

Although still controversial, weight loss can benefit metabolic profiles, inflammatory status, muscle quality, and physical function

Obese, 80+ and/or with Complications

There are no studies on obesity reduction in this age group

- Experts advise weight maintenance and emphasis on healthy lifestyle (diet and exercise as tolerated)
- This includes those with terminal illness, severe chronic disease conditions and moderate to severe dementia

In Health Care Communities

Plan menus to meet the meal patterns recommended by the Dietary Guidelines for Americans 2015-2020

- Focus on nutrient-dense foods
- Reduce calories as appropriate based on individual needs

In Health Care Communities

Offer more menu choices that are:

- Offer more variety of fruits and vegetables at each meal
- Provide lower-calorie snack choices
- Encourage physical activity programs that meet the needs of your population

Most Important for Older Adults

Individualize nutrition interventions based on comprehensive nutrition assessment

- Many older adults have multiple comorbidities - it is essential to address all nutritional needs
- Follow evidence-based guidelines
- Focus on improving health behaviors: Eat well, stay active, get enough sleep

Most Important for Older Adults

Recognize the right of an individual to refuse medical interventions, including weight reduction, even if the health care team perceives a benefit to weight reduction

Recognize the right to individual choice, including food and beverage choices

References/Resources

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www.beckydorner.com

- Sign up for our free membership
- Free email newsletter, discounts on our publications, additional valuable free resources

Online Discount Code: SPK20
for 20% off your online order through 6/15/16