Metabolic Syndrome Guidelines

Metabolic Syndrome is a condition that represents a cluster of risk factors. People with Metabolic Syndrome are much more likely to develop chronic health conditions, including cardiovascular disease and diabetes. A diagnosis of Metabolic Syndrome is appropriate when any three of the following risk factors are present:1

- Waist measurement > 35 inches in women and > 40 inches in men
- Elevated blood pressure or receiving treatment for hypertension
- Fasting blood glucose > 100 mg/dl or receiving treatment for diabetes
- Elevated triglycerides or receiving treatment for elevated triglycerides
- Low HDL-cholesterol or receiving treatment for low HDL-cholesterol

Obesity greatly increases the potential to develop Metabolic Syndrome.1,2 Between 2013 and 2014, prevalence of obesity (BMI 30.0 kg/m² – 39.9 kg/m²) in people 20 years of age and older was 37.9 %.3 That same year, the incidence of morbid obesity (BMI ≥ 40 kg/m²) was 7.7 % in the same age category.3 In 2012 the United States Preventive Services Task Force (USPSTF) stated that two leading causes of preventable death were from ischemic heart disease and diabetes secondary to obesity.4 See also Clinical Practice Guidelines for Weight Management.5

### Lifestyle Changes to Prevent the Development of Risk Factors for Metabolic Syndrome

<table>
<thead>
<tr>
<th>Diet</th>
<th>Source Guideline</th>
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<tbody>
<tr>
<td>These dietary recommendations can improve some dyslipidemias in adults:</td>
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<tr>
<td>- Eat vegetables, specifically those that are green and leafy</td>
<td>6/Page 12 Table 5</td>
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<tr>
<td>- Choose whole grain cereal, bread, and rice</td>
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<td>- Reduce dairy fat intake</td>
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<td>- Select lean proteins, such as fish, boneless, skinless chicken or</td>
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<tr>
<td>turkey, reduced-fat ground beef, eggs, legumes, and nuts</td>
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<tr>
<td>- Use monounsaturated and polyunsaturated oils for cooking</td>
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<td>- Opt for unsweetened or whole fruits and no added-sugar alternatives</td>
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<td>- Personalize your caloric intake, adapted for cultural preferences</td>
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<td>and/or health conditions, as appropriate</td>
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<tr>
<td>- Consider the DASH diet, the USDA Food Pattern, or the AHA diet</td>
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<td>- Limit alcohol consumption</td>
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These dietary recommendations can help achieve and maintain an optimal blood pressure in adults:

- Follow the dietary recommendations for improvement of some dyslipidemias (above)
- Reduce dietary sodium consumption to 2,400 mg/d or less
  - Consider greater restraints for lower blood pressure targets
  - Note that reducing sodium consumption by 1,000 mg/d has been proven to improve blood pressure readings
  - Observe the nutritional facts panel when shopping and make selections based on those items w/the lower sodium content.
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- Choose items labeled as low or reduced sodium or no-salt added
- Opt for fresh or frozen vegetables over alternative packaging
- At-home meal preparation is optimal for control and awareness of ingredients
  - Consider a sodium restricted DASH diet
  - Limit alcohol consumption

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<th>Physical Activity</th>
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| These physical activity recommendations can help improve some dyslipidemias and blood pressure in adults:  
  - Reduce periods of inactivity throughout the day  
    - Engage in aerobic activity, which should be carried out in no less than ten-minute sessions w/multiple sessions carried out every day/week.  
      - **Moderate intensity:**  
        - Should consist of no less than 150 minutes of activity/week  
        - May be increased to 300 minutes of activity (or more)/week as tolerated  
      - **Vigorous intensity:**  
        - Should consist of no less than 75 minutes of activity/week  
        - May be increased to 150 minutes of activity (or more)/week as tolerated  
    - Intensity levels may be combined and should span over recommended time periods  
    - Incorporate strength training as tolerated for added health benefits  
    - Increasing physical activity beyond recommendations is appropriate (as tolerated) and can lead to achievement of added health benefits | |
| Consider these additional points when starting a physical activity program:  
  - Develop an individualized exercise plan, considering the presence of chronic or debilitating physical illness, current fitness level and physical abilities  
  - Introduce physical activity gradually and increase in frequency and intensity as tolerated  
  - Considering a diverse array of physical activities tailored to individual tastes and preferences to increase the chance for successful implementation and maintenance  
  - Observe appropriate safety precautions to avoid injury, discouragement, and delay in achieving an exercise plan goals | |
<table>
<thead>
<tr>
<th>Metabolic Syndrome Source Guideline</th>
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| 1. U.S. Department of Health and Human Services, National Heart, Lung, and Blood Institute, What Is Metabolic Syndrome?  
http://www.nhlbi.nih.gov/health/health-topics/topics/ms |
http://circ.ahajournals.org/content/129/25_suppl_2/S102 |
http://circ.ahajournals.org/content/early/2013/11/11/cir.0000437740.48606.d1 |
| 7. U.S. Department of Health and Human Services, National Heart, Lung, and Blood Institute, Heart-healthy eating.  
http://www.nhlbi.nih.gov/health/health-topics/topics/heart-healthy-lifestyle-changes/heart-healthy-eating |
| 8. U.S. Department of Health and Human Services, 2008 Physical Activity Guidelines for Americans, Be Active, Healthy, and Happy!  