March 21, 2011

Staphylococcal enterotoxin B (SEB) Fact Sheet

1. **What is Staphylococcal enterotoxin B (SEB)? -** SEB is one of several harmful substances produced by the bacterium *Staphylococcus aureus*. This toxin is a common contributor to food poisoning in humans. The bacteria grow and produce toxins in unrefrigerated meats, dairy, and bakery products. Typically, food poisoning due to SEB occurs in clusters because of a common food source (in settings such as a church picnic, eating contaminated food). However, SEB has also been produced by some countries as a biological weapon. This toxin can disable people who are exposed to it for several weeks, but it is rarely deadly.

2. **How is SEB spread? -** People can be exposed to SEB by either eating or drinking it or by breathing it in. *SEB cannot usually be spread from one person to another*. In a biological attack, the toxin could be spread in food, water, or as an aerosol (vapor).

3. **What are the symptoms and health effects of SEB exposure? -** People who have ingested (swallowed) SEB typically experience symptoms common to food poisoning, including nausea, vomiting, and diarrhea. Symptoms of exposure by breathing in a vapor form of SEB include a dry cough, shortness of breath, and chest pain. In severe cases, there may be a build up of fluid in the lungs. Both forms of disease can be accompanied by fever, chills, headache, and muscle pain. The symptoms associated with exposure to SEB through the air might distinguish a biological attack from a natural occurrence, because it would be so rare for the vapor form to occur naturally. SEB is rarely life threatening.

4. **How soon after exposure do symptoms appear?**

   a. After swallowing SEB, symptoms would be expected to show up 4-10 hours later. After breathing it in, symptoms usually appear 3-12 hours later.

   b. Following exposure to SEB through the air, about 4 out of 5 people get sick. A fever tends to last 2-5 days; coughing may last up to 4 weeks.

5. **Are there medical tests that can tell people whether they've been exposed to SEB? -** SEB exposure is generally determined from a patient's symptoms, though lab tests may show the toxin in the blood, urine, or nasal swabs for a short time following exposure.

6. **What is the treatment for SEB disease? -** People exposed to SEB usually get better on their own. The only available treatment is medical care to ease the symptoms. Antibiotics are of no benefit. Making sure patients get plenty of fluids is important. In very severe cases, respiratory (breathing) support may be required.

7. **How can the poisonous effects of SEB be prevented? -** It is important to prevent the contamination of food with *Staphylococcus* before the toxin can be produced.

   a. Wash hands and under fingernails vigorously with soap and water before handling and preparing food.

b. Do not prepare food if you have a nose or eye infection.

c. Do not prepare or serve food for others if you have wounds or skin infections on your hands or wrists.

d. Keep kitchens and food-serving areas clean and sanitized.

e. If food is to be stored longer than two hours, keep hot foods hot (over 140°F) and cold foods cold (40°F or under).

f. Store cooked food in a wide, shallow container and refrigerate as soon as possible.

8. **For more information about SEB:**
   http://www.cdc.gov/ncidod/dbmd/diseaseinfo/staphylococcus_food_g.htm

This fact sheet provides general information. Please contact your physician for specific clinical information.