



# The Liker Health Report

Keeping People Focused on Staying Fit & Healthy

Spring 2012

The Liker Health Report is a quarterly publication intended to raise awareness of health-related issues and to encourage readers to take charge of their health and live healthier, more fulfilling lives.

## The Heart of the Matter: NANOPARTICLES IN PROCESSED FOODS

One of the newest and most quickly evolving fields of bioengineering is the use of nanoparticles. Nanoparticles are microscopic synthetic materials that are being used by food companies to enhance the appeal of their products. Only a decade ago, nanoparticles were confined to research labs and had little beyond a theoretical use. Now that scientists have developed machines to manufacture nanoparticles on a large scale, their theoretical applications are entering the world of consumer products, including the food supply.

### How Small is a Nanoparticle?

A typical human hair is 80,000 nanometers across. A nanoparticle is less than 100 nanometers across.

Nanoparticles can make ice cream creamier with less fat; make skim milk appear more white; enhance the flavors in salad dressings and sauces; make ketchup more free-flowing from a glass bottle; or give the crust on bread its rich color. So just what do these nanoparticles consist of to make foods more delectable and have a longer shelf-life? Titanium oxide, silicon oxide, and zinc oxide are added to processed foods, yet manufacturers are not required to label their products as such. It is estimated that about 140 different foods and food products, most of which are processed foods, contain nanoparticles. These include but are not limited to, dairy products, condiments, cooking oils, baking mixes, and diet/meal replacement shakes.

The concern surrounding nanoparticles stems from the fact that they are relatively new and not enough research has been done on the effects on human health. The U.S. Food and Drug Administration (FDA) does not require nanoparticles to be proven safe, only that the foods containing nanoparticles are not harmful. Nanoparticles are so small that as a food travels through the intestinal tract, the nanoparticles could enter individual cells, or the nuclei of cells, thereby affecting the DNA. If nanoparticles could cause a genetic mutation, some diseases, such as cancer could theoretically develop years down the road.

A new study from Cornell University suggests that using nanoparticles in food or pharmaceuticals may be more harmful than previously believed. Researchers looked at how polystyrene nanoparticles affected the iron absorption in chickens and in human intestinal cells (in a petri dish). Polystyrene nanoparticles are FDA-approved and found in food additives and vitamins. Chickens were used because they absorb iron in a similar manner as humans. Acute (short-term) exposure caused a decrease in iron absorption in both human cells and chickens. Chronic (over a two week period) exposure caused an increase in iron absorption; the intestinal cells changed by increasing their surface area. The study showed that the body can adapt to change, but it has the potential to over-absorb harmful compounds as well. Therefore, we may need to reconsider the use of nanoparticles in food until more is known about any potential health risks.

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## Your Lifestyle: HEALTHY TRAVEL ABROAD

Whether for work or pleasure, traveling abroad can be an exciting adventure, but many travelers run into serious problems, which could have been prevented with some pre-trip planning. It's always a good idea to have a complete medical check-up to discuss your travel plans with your primary care provider and carry all relevant medical information with you.

### Immunizations

Depending on where you'll be traveling to, your doctor will be able to tell you which immunizations, if any, are necessary. Some of the more exotic locations require a series of shots to be given within a specific time frame. Therefore, plan ahead to be sure that you're adequately protected before you leave the U.S.

### Medication

If you take medication for a chronic condition (i.e., hypertension, diabetes) be sure to bring enough medication and/or supplies to last the entire trip. To avoid any hassle from customs, be sure that you wear your medical i.d. bracelet and have a medical history checklist with you. If you are not sure how long you'll be away, carry a prescription in case you need a refill. Also, ask your doctor whether a change in climate, altitude, or a time difference will affect your medication requirements and dosing schedule.

### Travelers' Diarrhea

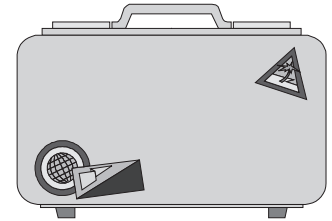
Just about everyone who travels abroad has experienced abdominal cramps and diarrhea. Contaminated food and water contain bacteria, most commonly, E. coli, which attach themselves to the lining of the small intestine and release a toxin which in turn, causes abdominal symptoms.

A lack of refrigeration and poor sanitation, often found in developing countries, are the prime culprits. Bacteria thrive and multiply in food that has not been heated to the proper temperature or is improperly stored. The first rule of thumb is **eat it hot**. Be sure that all food is well cooked and eat it before it cools

#### MEDICAL CHECKLIST

- ✓ Patient's Name
- ✓ Physician's Name
- ✓ Physician's Address
- ✓ Physician's Phone
- ✓ Current Medications
- ✓ Blood Type
- ✓ Allergies
- ✓ Medical Conditions
- ✓ Emergency Contact

down to room temperature. It's a good idea to avoid eating food prepared by street vendors; the cooking conditions are typically less sanitary than restaurants.



Local, untreated water is frequently contaminated with bacteria, so the second rule of thumb is **don't trust the water**. Only drink bottled or boiled water -- even for brushing your teeth. Many people wonder why they got sick even though they drank bottled water, but what they forgot was that the ice was made from contaminated tap water. Bottled beer, wine, and canned soda are safe beverages if bottled water is not available.

The third rule of thumb is **raw is risky**. Raw fruits and vegetables are washed with the same contaminated water that you're already avoiding. They can also be contaminated by the food handlers. So, choosing a healthy salad may be o.k. for your waistline, but not your digestive system. A safer choice is fruit that can be peeled, such as an orange, mango, or pineapple but be sure to peel it yourself.

If you do get travelers' diarrhea, the most important thing to do is lie down and rest. You can prevent dehydration by drinking small sips of bottled water, clear soup, or diluted bouillon; do not drink alcohol. To relieve headache and muscle aches, Tylenol is helpful. Pepto-Bismol or Imodium can relieve severe diarrhea. Prolonged diarrhea can deplete the body of fluids and electrolytes (salts). If you are unable to get professional medical help, the following homemade solution can help:

- 1/2 teaspoon table salt
- 1/2 teaspoon baking soda
- 4 tablespoons table sugar
- 1 liter carbonated water (tap water boiled for 15 minutes may be substituted)



#### Did You Know?

You can get more information about safe and healthy travel at [www.cdc.gov/travel](http://www.cdc.gov/travel).

## Playing It Safe: MOLDS ON FOOD

Do you have a “science experiment” lurking in your refrigerator or at the bottom of your fruit bowl? Is it safe to eat or are you risking a potentially life-threatening illness? Although we can’t see bacteria on foods, molds growing on foods are usually visible to the naked eye. That fuzzy, gray, green or white spots on long forgotten foods is the tell-tale sign that a food is on the spoilage path.

Molds are microscopic fungi that live on both plant and animal matter. The anatomy of a mold consists of (1) threads (like the roots of a plant) that grow below the food surface, (2) a stalk that grows outward from the food, and (3) spores that form at the ends of the stalk. The spores are what gives mold its color. Moldy foods can also have invisible bacteria growing in close proximity to the fungi. Typically, foods with a high moisture content are susceptible to mold and coexisting bacteria.



### BENEFICIAL MOLDS

Molds which are safe to eat, are used to make certain types of cheeses. Spores are introduced internally to create blue veined cheeses, such as blue, Roquefort, Gorgonzola, and Stilton. Spores are introduced internally and on the surface to create Brie and Camembert. Molds that are not part of the manufacturing process can be dangerous and care should be taken to either remove it from the cheese or discard it completely (*see guidelines below*).

### DANGEROUS MOLDS

Some molds are dangerous and may cause allergic reactions or respiratory problems when inhaled. Some molds can actually cause illness from the poisonous substances they produce, called *mycotoxins*. Mycotoxins are primarily produced by molds on grains, nuts, grape juice, apples, and celery. Approximately 25% of the world’s food crops are affected by mycotoxins, of which *aflatoxin* is most well-studied. Aflatoxin is a cancer-causing poison produced by fungi that typically inhabits peanuts, corn and grain crops used for livestock feed as well as human consumption. The FDA has established guidelines for acceptable levels of aflatoxin in food or feed to protect both human and animal health. Both the FDA and USDA monitor peanut and corn crops and remove any food or feed product with unacceptably high levels of aflatoxin.

Acute exposure to high levels of aflatoxin causes sudden death of liver cells (hepatic necrosis), later resulting in cirrhosis and/or liver cancer. Both humans and animals can be affected, yet adult humans have a high tolerance for aflatoxin exposure and rarely succumb to liver problems caused by acute aflatoxicosis. Children, on the other hand, are particularly vulnerable, which leads to stunted growth and delayed development. Chronic aflatoxin exposure also increases the risk of developing liver cancer.

*Continued on page 7.*

#### Molds on Food -- DISCARD

- ✓ Lunch/deli meats, bacon, and hot dogs
- ✓ Cooked, leftover meats and poultry
- ✓ Cooked casseroles
- ✓ Cooked grains and pastas
- ✓ Soft cheeses (cream cheese, Neufchatel, cottage cheese)
- ✓ Crumbled, shredded, or sliced cheeses
- ✓ Soft cheeses made with mold (Brie, Camembert)
- ✓ Yogurt and sour cream
- ✓ Jams and jellies
- ✓ SOFT fruits and vegetables (tomatoes, cucumbers, stone fruits, grapes)
- ✓ Bread and baked goods
- ✓ Peanut butter and nuts
- ✓ Legumes

#### Molds on Food -- O.K. to USE\*

- ✓ Hard salami and dry-cured country hams  
Scrub mold off.
- ✓ Hard cheeses (Parmesan, cheddar)  
Cut off at least 1 inch all around the mold spot; do not insert knife into mold and wrap cheese with new plastic wrap to avoid cross-contamination.
- ✓ Hard cheeses made with mold (blue, Roquefort, Gorgonzola, Stilton)  
Cut off at least 1 inch all around the mold spot; handle as hard cheese.
- ✓ FIRM fruits and vegetables (carrots, potatoes, cabbage, apples)  
Cut off at least 1 inch all around the mold spot; do not insert knife into mold to avoid cross-contamination.

*\*Follow mold-removal directions before eating*

# Charting the Symptoms: COUGHING

Coughing can be more than just annoying; it is a symptom that has many causes. Begin with Question #1 and follow through to your specific coughing symptom(s) and then discuss with your doctor.

QUESTION #1

Did your cough begin suddenly? **YES** → Go to QUESTION #12.

**NO** ↓

QUESTION #2

Are you extremely short of breath & coughing up pink, frothy mucus? **YES** → You may have **pulmonary edema** (fluid in the lungs). **ASAP** →



**NO** ↓

QUESTION #3

Does coughing produce clear or pale yellow mucus? **YES** → You may have a **cold** or the **flu**. → Drink plenty of clear fluids; get lots of rest; take OTC medications to treat symptoms.

**NO** ↓

QUESTION #4

Does coughing produce tan, yellow, or green mucus? **YES** → You may have **chronic bronchitis**; if you also have fever and chills, it may be **pneumonia**.



**AND**  
Drink plenty of clear fluids; get lots of rest; do not smoke.

**NO** ↓

QUESTION #5

When you cough, are you short of breath and wheezing? **YES** → You may have **asthma**.



See your doctor; asthma can be serious if not properly diagnosed and treated.

**NO** ↓

QUESTION #6

Do you have leg swelling and/or shortness of breath either after activity or after lying down? **NO** → Go to QUESTION #10.

**YES** → Go to QUESTION #7.

QUESTION #7

Do you have heart problems? || YES → You may have **congestive heart failure.** || →



NO ↓

QUESTION #8

Have you recently begun coughing up blood or bloody sputum? || NO → Go to QUESTION #12.

YES ↓

QUESTION #9

Do you have sharp chest pain, rapid heartbeat, leg swelling, and sudden onset of shortness of breath? || YES → You may have a **pulmonary embolism** (blood clot that moved from the legs to the lungs). || ASAP → OR



NO ↓

QUESTION #10

Do you have fever, chills, and night sweats and do you have chest pain when you cough or take a deep breath? || YES → You may have **tuberculosis** or other lung infection. || →

NO ↓

QUESTION #11

Have you lost weight without trying? || YES → You may have **lung cancer.** || ASAP →

NO ↓

QUESTION #12

Did you inhale dust, particles or an object? || YES → You have an **airway irritation** or **obstruction.** || ASAP → OR   
If coughing does not clear the airway.

NO ↓

Check with your doctor. If you think the problem might be serious, call right away.

Charting the Symptoms is an educational tool to help readers understand what certain symptoms might mean, what the diagnosis might be, and when a physician should be consulted. It should not replace medical advice, nor should you rely upon it solely to make health decisions. Charting the Symptoms has been adapted from the American Academy of Family Physician's *Family Health & Medical Guide*.

## Personal Health: INGUINAL HERNIA

### What is an inguinal hernia?

An inguinal hernia is a condition in which part of the small intestine or a portion of abdominal fat bulges through a weakened area or a tear in the lower abdominal muscles. It occurs in the groin (between the abdomen and thigh) and forms a balloon-like sac. An inguinal hernia appears as a bulge on one or both sides of the groin. They can often be moved back into the abdomen using gentle massage. However, if untreated, inguinal hernias usually get larger over time; hernias do not heal without surgery. There are two types of inguinal hernias – direct and indirect.

**Direct inguinal hernias** result from a degeneration in the connective tissue of the abdominal muscles, which in turn, weakens the muscles during adulthood. Only men experience direct inguinal hernias, and they develop gradually because of continuous stress on the muscles. One or a combination of factors can cause pressure on the abdominal muscles and may worsen the hernia. These include:

- ✓ sudden abdominal twists, pulls, or muscle strains
- ✓ lifting heavy objects
- ✓ straining due to constipation
- ✓ weight gain/obesity
- ✓ chronic coughing

**Indirect inguinal hernias** are congenital (present from birth) hernias and occur more frequently than direct inguinal hernias. They are also significantly more common in males than females due to the way males develop in the womb. Premature babies have a high risk for indirect inguinal hernias because they have less time to develop in the womb.

### What are the symptoms of an inguinal hernia?

- ✓ small bulge under the skin in the groin area; may increase in size and disappear when lying down
- ✓ swollen or enlarged scrotum (in males)
- ✓ pain when lifting, exercising, coughing, straining during bowel movements or urination, or prolonged standing or sitting
- ✓ a gurgling, burning or aching feeling at the bulge

If an inguinal hernia becomes stuck in the groin or scrotum (in men) and massaging it does not return it to the abdomen, it becomes an *incarcerated hernia*. The portion of the small intestine is trapped (incarcerated); subsequent swelling limits or cuts off the blood supply. When this occurs, it becomes a *strangulated hernia*. Symptoms include:

- ✓ extreme tenderness and redness in the area of the bulge
- ✓ sudden, continuous pain that worsens quickly
- ✓ fever
- ✓ rapid heart rate
- ✓ nausea and vomiting

A strangulated hernia is a medical emergency requiring surgery. Any delay in surgery can be life-threatening. The affected portion of small intestine may become infected and/or die due to lack of oxygen from lack of blood supply; if this occurs, that segment of the intestine must be removed. In infants and children, inguinal hernias are always treated to prevent incarceration and strangulation.

Doctors take a wait and see approach with adults.

### What is the surgical procedure for an inguinal hernia?

Inguinal hernias are repaired by either *open hernia repair* or *laparoscopy*. Open hernia repair involves making an incision in the groin; moving the hernia back into the abdomen; and reinforcing the abdominal wall with either stitches or a synthetic mesh. Open hernia repair is typically for large hernias and requires more recovery time. Laparoscopic surgery involves inserting a tiny camera through several small abdominal incisions to view the hernia and using instruments to repair it with a synthetic mesh. Laparoscopic surgery is ideal for small hernias and the recovery time is usually quicker. Both types require general anesthesia.

#### Types of Hernias

- **Inguinal** is in the groin
- **Umbilical** is around the belly button
- **Incisional** is through a scar
- **Hiatal** is a small opening in the diaphragm which allows the upper portion of the stomach to move up into the chest
- **Congenital diaphragmatic** is a birth defect that requires surgery



#### Did You Know?

Surgeons perform approximately 600,000 hernia repair operations annually in the United States.

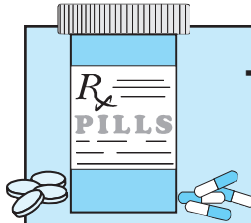
## MOLDS ON FOOD *continued from page 3*

Molds prefer the warm, humid temperature of the kitchen counter, but they can also thrive in the cool, drier environment of the refrigerator. Cleanliness is key to minimizing mold growth. Steps to preventing mold include:

- ✓ **Clean inside of refrigerator regularly**  
Dissolve 1 tablespoon of baking soda in 1 quart of water and wash the entire inside of the refrigerator; any visible mold should be scrubbed with 1 tablespoon of bleach in 1 quart of water.
- ✓ **Keep dish cloths, towels & sponges clean**  
Launder cloths and towels in hot water and bleach; dip sponges in 1 tablespoon bleach in 1 quart of water; discard any sponge or towel that cannot be adequately cleaned.
- ✓ **Maintain home humidity levels of less than 40 percent**
- ✓ **Check fruit bowl & vegetable bins regularly**  
Look for any signs of mold and remove item promptly to prevent cross-contamination. Carefully inspect produce before buying and avoid bruised produce.
- ✓ **Keep perishable foods covered & refrigerated**  
Cover foods that are being served to prevent air-borne mold spores from landing on them. Refrigerate perishable foods within 2 hours. Use leftover food within 3-4 days.

If you find moldy food in the refrigerator or in a counter-top fruit bowl, take care to do the following:

- ✓ Discard any mold-covered food by putting it in a paper or plastic bag and disposing in a covered trash can; this prevents children or animals from being exposed.
- ✓ Examine nearby items to see if mold has spread and discard if necessary.
- ✓ Clean the refrigerator, pantry, or fruit bowl where the moldy food was stored using the bleach solution described above.
- ✓ NEVER sniff a moldy food.



## The Medicine Cabinet

### Prescription Potassium Supplements

**Trade Name:** Potassium (poe tass' i um)

**Drug Classification:** mineral supplement

**Purpose:** Potassium is essential for the proper functioning of the heart, kidneys, muscles, nerves, and digestive system. Some diseases (i.e., kidney disease and gastrointestinal disease) and drugs deplete the body of potassium.

**Action:** Supplements replace potassium losses and prevent potassium deficiency.

**Dispensing Method:** oral liquid, powder, granules, effervescent tablets, regular tablets, extended-release tablets, and extended-release capsules. Supplements are typically taken two to four times a day, with meals or immediately after meals. All forms of potassium should be taken with a full glass of water or fruit juice.

**Major Precautions:** Tell your doctor if you use a salt substitutes that contains potassium or if you eat a lot of potassium-rich foods (i.e., bananas, prunes, raisins, milk), as this will influence the dose of potassium supplement he/she prescribes. Some patients should not take potassium supplements while taking certain blood pressure medications without their doctors' approval.

**Side Effects:** The most common side effects include upset stomach, vomiting, and diarrhea. **SERIOUS:** Call your doctor immediately if you experience mental confusion; listlessness; tingling, prickling, burning, or tight sensation in the arms, hands, legs, or feet; heaviness or weakness in the legs; cold, pale, gray skin; stomach pain; unusual stomach bulging; or black stools.

*As with any medication, always follow your doctor's instructions, and if you have any problems, side effects, or questions, follow up with your doctor or pharmacist.*



#### Did You Know?

Penicillin, a life-saving antibiotic, is a mycotoxin.

## What's the Message?

### FOR YOUR **NANOPARTICLE** AWARENESS:

To minimize consumption of nanoparticles in foods, avoid processed foods and buy organic.

Although we do not have enough evidence to show that nanoparticles may be harmful, it is not a reason to be complacent either.

### FOR YOUR **SAFE & HEALTHY TRAVEL**:

Pre-trip planning can help travelers avoid some common travel pitfalls and ensure a healthy and safe trip.

Your best chances of having an enjoyable trip, free of intestinal woes, is to take care when eating and drinking local foods and beverages.

### FOR YOUR **MOLDY FOOD** AWARENESS:

Follow guidelines to keep foods fresh and mold out of the refrigerator and pantry.

Know the proper way to remove mold from food.

### FOR YOUR **COUGH SYMPTOMS**:

Coughing accompanied by other symptoms can signal a serious problem and should be evaluated by a doctor.

Coughing up blood or pink, frothy mucus is a medical emergency.

### FOR YOUR **INGUINAL HERNIA** AWARENESS:

Men are more prone to inguinal hernias, but women can still get them, too.

If you have a hernia and symptoms quickly worsen, see your doctor right away; it is a medical emergency.

#### QUOTABLE QUOTATIONS

*Cheerfulness is the best promoter of health and is as friendly to the mind as to the body.*

**Joseph Addison**

***Dear Dr. Liker... I experienced a headache, flushing, and a feeling of pressure in my face after eating Chinese food. Is there a connection?***

These symptoms could be caused by a sensitivity to MSG (monosodium glutamate). As Chinese food became more popular in Western cultures, many people reported a collection of symptoms within about two hours of eating Chinese food containing this food additive. Symptoms include chest pain, flushing, headache, sweating, sense of facial pressure or swelling, and numbness or burning around the mouth. Much research has been done, yet failed to establish a connection between MSG and these symptoms. Some individuals may simply have a heightened sensitivity to MSG, and it is advisable to avoid Chinese food that contains MSG.

Because research studies did not definitively conclude that MSG caused symptoms, it is still permitted as a food additive. Minor symptoms such as headache and flushing do not require medical treatment; however, if you experience chest pain, heart palpitations, shortness of breath, or swelling of the throat, seek immediate medical attention.

**HL**

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## Keeping People Focused on Staying Fit & Healthy

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