Resources

FoodSafety.gov
http://www.foodsafety.gov/keep/types/eggs/

USDA Food Safety and Inspection Services
http://www.fsis.usda.gov/fact_sheets/Focus_On_Shell_Eggs/index.asp

USDA Food Safety Research Office
http://ddr.nal.usda.gov/bitstream/10113/355/1/CAT30987219.pdf

U.S. Food and Drug Administration
http://www.fda.gov/Food/ResourcesForYou/Consumers/ucm077342.htm

Egg Safety Center
http://www.eggsafety.org/

Center for Hygiene & Health in the Home and Community

Overview

Eggs are a low in calories and high in nutrients. One large egg has 70 calories and is good source of protein. They are used in recipes ranging from casseroles and quiche to cookies and cakes. Eggs are safe to eat when produced, handled and cooked properly. Following food safety procedures helps to prevent food-borne diseases, like Salmonella, which has recently been associated with undercooked or raw eggs sourced from unsanitary egg production facilities.

Simmons College

300 The Fenway
Boston, MA 02115

http://www.simmons.edu/hygieneandhealth

Safe Handling of Eggs and Egg Substitutes

September 2010

ABC's of Handling and Preparing Eggs

- Cook scrambled eggs until firm.
- Fried, boiled baked or poached eggs should cook until the entire egg is firm.
- Egg dishes like quiche or casseroles, should cook until the center reaches 160°F on a food thermometer.
- Homemade eggnog and ice cream should be made with pasteurized eggs or egg substitutes and cooked in milk to 160°F, then added to the remaining ingredients.
- Pies topped with meringue are safe when baked at 350°F for 15 minutes.
- Avoid fruit whips or chiffon pies made with raw egg whites.
- People with compromised immune systems, babies, children, elderly and pregnant women should always cook eggs properly before eating.

Egg Substitutes

- Both liquid and frozen egg substitutes are pasteurized and safe to use in recipes calling for uncooked eggs.
- Cooking egg substitutes is always best.

Handling Eggs and Egg Dishes

- Proper handling of eggs is essential to avoiding food-borne illness such as *Salmonella*.
- Purchase eggs from a refrigerator or refrigerator case.
- Be sure eggs are clean and free from cracks.
- Refrigerate immediately in the original carton.
- Wash hands and cooking materials before and after working with eggs or egg substitutes.
- Serve cooked eggs and dishes containing eggs immediately after cooking.
- Keep hot dishes hot and cold dishes cold.
- If egg dishes are refrigerated, reheat to 165°F prior to serving.
- Cold, cooked eggs should not be left out for more than 2 hours. Reheat or refrigerate within 2 hours.

Egg Storage

Egg Product	**Refrigerator**	**Freezer**
Raw eggs, in shell	3-5 weeks	Beat eggs, then freeze
Raw egg whites	2-4 days	12 months
Raw egg yolks	2-4 days	Do not freeze
Hard-boiled eggs	1 week	Do not freeze
Egg substitutes, liquid – sealed	10 days	1 year
Egg substitutes, liquid – open	3 days	Do not freeze
Egg substitutes, frozen – sealed	Thawed, 1 week or "Use-By" date	1 year
Egg substitutes, frozen – open	Thawed, 3 days or "Use-By" date	Do not freeze
Egg casseroles	3-4 days	Cooked, 2-3 months
Store-bought eggnog	3-5 days	6 months
Homemade eggnog	2-4 days	Do not freeze
Pumpkin or pecan pie	3-4 days	Cooked, 1-2 months
Custard or chiffon pie	3-4 days	Do not freeze
Quiche	3-4 days	Cooked, 1-2 months

Salmonella Contamination

- Salmonellosis is a food-borne illness caused by the bacteria *Salmonella.*
- The *Salmonella* bacteria live in the intestinal tracts of animals and are usually transmitted to humans through animal products.
- A type of *Salmonella* with the serotype *enteritidis can* infect the ovaries of "healthy" hens and contaminates the eggs prior to shell formation. This means that the bacteria are present *inside* the egg
- Symptoms of *Salmonella* include fever, abdominal cramps and diarrhea 12 to 72 hours after consuming a contaminated food or drink.
- Illness lasts 4 to 7 days and may require medical treatment. It can cause severe illness, and even death, in the young, elderly and immuno-compromised.
- Poultry farmers in the United Kingdom use vaccines to control the spread of *Salmonella* in poultry. This has resulted in significant reduction in contamination of poultry and cases of the food-borne illness in humans.
- Vaccination is not required by the USDA but is allowed at the discretion of the egg producer.

Treatment of Animals and Food Safety

- Proper treatment and care of hens is vital when producing eggs.
- Egg-producers should work with the local health department and veterinarians to ensure that hens used for egg production are disease free.
- Farmers should give consideration to providing clean feed and water and appropriate living conditions for hens.
- With appropriate care, cage, cage-free, free range and organic can all be suitable methods for healthy egg production