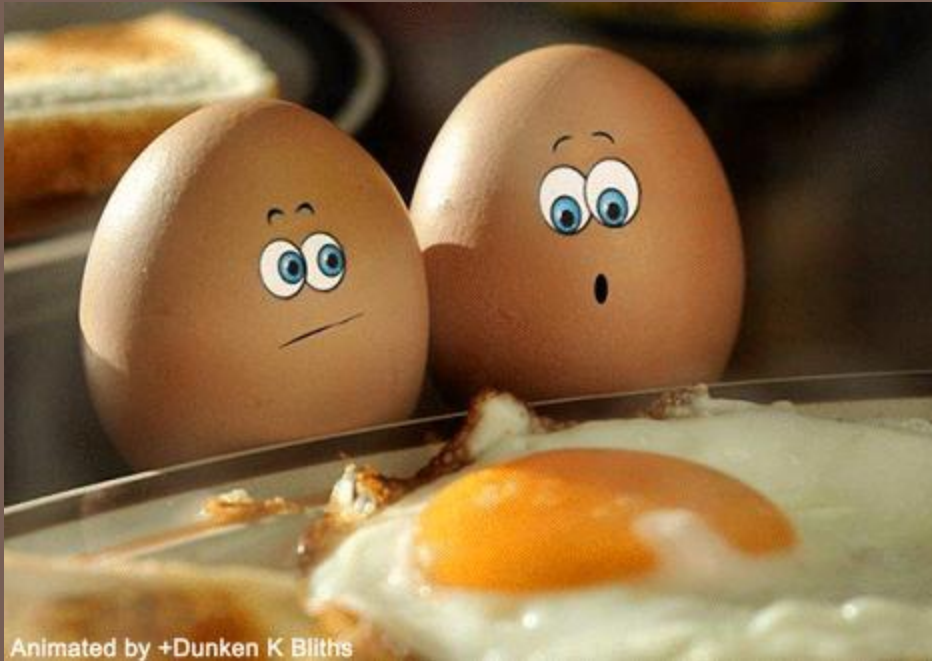


Dairy & Eggs

1.1



Dairy Products



Milk and Milk Products

Some milk is available in raw form, but most milk products are processed to remove harmful bacteria that could make people sick.

▣ **Pasteurization:**

- ▣ Milk is **heated to kill microorganisms** that cause spoilage and disease without affecting its nutritional value.

▣ **Homogenization:**

- ▣ Milk is **strained** through very fine holes to **break down fat** and then **blended into one fluid**.



Milk Receiving & Storage

- Milk products should be received and stored at **41°F or lower.**
- Always use the **FIFO** (First In, First Out) method of stock rotation for milk.
- All milk/milk products should be labeled **“Grade A”**

Milk Receiving & Storage

- Milk should be **rejected** if it is **too sweet** or if it has a **sour, bitter, or moldy taste**.
- Any milk that has passed its **use-by or expiration date** should be **thrown away**.

Cream

- **Cream** contains far **more fat** than milk.
 - Chefs use it based mainly on its fat content, which provides **richness**.
- **Half and Half**
 - $\frac{1}{2}$ **cream**, $\frac{1}{2}$ **milk**
 - Substitute:
 - If you have heavy cream but need half and half, use half the amount of heavy cream and add milk for the remainder amount

Butter



- **Butter** is made by mixing **cream** containing between **30-45% milk fat** at a **high speed**.
- Most commercially-sold butter is lightly salted.
 - **Salt** acts as a **preservative** and sometimes to **enhance flavor**.

Butter and Butter Substitutes

- **Clarified** butter has been heated, and the milk solids and water have been removed.
- A **butter substitute** is any alternative used to replace butter in a recipe, such as margarine, olive oils, and soy-based oils.
- **Margarine** is a manufactured food product that **often contains no milk products.**
 - Must contain **80% of calories coming from fat**

Cooking with Butter & Fats

□ **Smoke Point:**

- The point at which an oil or fat begins to burn
- Clarified butter (*ghee*) has a higher smoke point
 - Less likely to burn when heated

Smoke Points of Common Fats

COMMON COOKING FATS RANKED

choose fats and oils based on 1) how they're made - choose naturally occurring, minimally processed options first 2) their fatty acid composition - the more saturated they are, the more stable/less likely to be damaged or oxidized they are, 3) smoke point - tells us how hot is too hot before we will damage the fats

		TOTAL FAT	SFA	MUFA	PUFA	SMOKE PT
SAFEST/ MOST STABLE ↓ UNSAFE/ LEAST STABLE	COCONUT OIL	100g	86g	6g	2g	350/450
	TALLOW/SUET	94g	52g	32g	3g	400
	BUTTER	81g	51g	21g	3g	350
	LARD	100g	39g	45g	11g	370
	OLIVE OIL	100g	14g	73g	11g	420
	PEANUT OIL	100g	17g	46g	32g	450
	VEGETABLE SHORT.	71g	23g	8g	37g	360
	CORN OIL	100g	15g	30g	55g	450
	SOYBEAN OIL	100g	16g	23g	58g	450
	SUNFLOWER OIL	100g	11g	20g	69g	450

Sources: http://en.wikipedia.org/wiki/Smoke_point, http://en.wikipedia.org/wiki/Fatty_acid

Cheese



- All cheeses have three basic parts:
 - **Water**
 - **Fat**
 - **Protein.**

- Dairies make cheese by separating a milk's solids from its liquid in a process called **curdling.**

Cheese Categories

- **Unripened:**

- Fresh cheeses, typically not aged

- **Ripened:**

- Bacteria either added or part of cheese

- **Processed:**

- Grinding, blending, and forming one or more natural cheeses
- Emulsifiers added
- Pasteurized to keep from aging
 - Example: American Cheese

Cheese Categories

Unripened

- Fresh cheeses:
 - Cream cheese
 - Cottage cheese
 - Ricotta cheese



Cheese Categories: Ripened

Ripened by injecting mold into cheese to spread during aging

- Bleu
- Gorgonzola
- Roquefort



Bacteria cultures/Enzymes added

- Cheddar
- Gruyere
- Asiago
- Parmigiano-Reggiano



Storing Cheese

- Wrap in **waxed** or **parchment paper**
- Optimal temperature: **35-45°F** at **high humidity**
 - Best at near the bottom of the refrigerator
- **Double wrap pungent cheeses**
 - Bleu cheese
- **Do not freeze**
- **Discard dry, slimy, or cheeses with a strong odor**

Lactose Allergy vs Intolerance

- **Lactose allergy** cause **allergic reactions** such as hives, swelling, etc.
- **Lactose intolerance** is a common **digestive condition** and is a reaction to many cultured dairy products, not just milk.
- **Dairy alternatives:**
 - Soy milk
 - Rice milk
 - Almond milk
 - Coconut milk
- **Ripened cheeses** are usually **well tolerated** because **curdling separates the solids** from the **lactose portion**

Eggs



Eggs

- An egg is composed of the outer shell, the white, and the yolk:
 - ▣ The white (albumen) consists of protein and water.
 - ▣ The yolk contains protein, fat, and lecithin, a natural emulsifier (thickener).
 - ▣ The membranes that hold the egg yolk in place are called chalazae.



Egg Grades



- There are USDA grades for shell
 - **USDA Grade AA:**
 - Yolk is high and the white will not spread much when the shell is broken.
 - **USDA Grade A:**
 - Yolk is fairly high and the white will still not spread too much when the shell is broken.
 - **Grade B:**
 - Good for use in menu items that will hide their appearance, such as baked items.

Egg Sizes



Egg Products

Shell

- No odor
- Clean and unbroken
- Stored at **45°F or lower**
- Best for fresh products/immediate service

Liquid
Frozen
Dehydrated

- **USDA inspected**
- Must be **pasteurized** by law
- Check packages for damage
- Store according to package directions

EGG COOKING TECHNIQUES



Cooking with Eggs

- Use **pasteurized shell eggs or egg products** when **prepping egg dishes** that need **little to no cooking**
 - ▣ Ex. Caesar salad dressing, tiramisu
- Cook eggs for **immediate service** to **145°F for 15 seconds.**
- Cook eggs that will be **hot-held** to **155°F for 15 seconds.**

Cooking Eggs



- Make **hard-cooked eggs** by **simmering**, then **shocking**, the eggs.
- Add eggs to saucepan or stock pot completely immersed in **cold water**
- Over **medium heat**, bring water up to a **boil**
- **Turn off heat, cover pan, and let sit for 10 minutes**
- Shock under **cold water**

Cooking Eggs

- To **bake** eggs, place the shelled eggs into individual *ramekins*.



Cooking Eggs

- **Shirred eggs** are a **variety** of baked egg **cooked with other ingredients**, such as cheese, vegetables, meats, and sauces.



Cooking Eggs

- To **poach** eggs, shell them and **simmer the eggs in water**.



Cooking Eggs

- **Scrambled eggs** should have a **light texture, creamy consistency**, and delicate flavor.
 - **Stir continuously** during cooking process.
- Make **omelets** by slightly **beating eggs**, and then cooking them in a **skillet with a filling**, such as cheese, mushrooms, onions, or ham.



Cooking Eggs

Fried Eggs

- Eggs ***fried up*** are fried only on the bottom (*sunny-side up*)
- Eggs fried ***over easy*** are fried on the bottom, turned over, and fried lightly on their top sides.



Cooking Eggs

- **Quiche** is a savory egg custard baked in a crust.
- **Soufflés** are made of eggs and can be both savory and sweet.



Section 1.1 Summary



- There are many types of milk; the type of milk you use is often based on the nutritional value you want.
- Cream must have at least 18 percent fat content to be considered light cream. Heavy whipping cream can be 40 percent fat or higher.
- Butter is made by mixing heavy cream at a very high speed.
- The pasteurization process is what kills bacteria in milk that could make people sick.
- All cheese has three basic parts: water, fat, and protein. The amounts vary depending on the type of cheese.
- Eggs are chosen by their grade (AA, A, or B) and size (ranging from peewee, the smallest, to jumbo, the largest).
- Eggs can be cooked using many different methods, including simmering, frying, poaching, and baking.

Assignments

- **Dairy & Eggs Crossword**
- **Egg Webquest**

- **Upcoming Labs:**
 - **Vegetable Frittata**
 - **Techniques: Knife Skill Review, Shirred Eggs**
 - **Fried Eggs**
 - **Techniques: Sunny-side up & Over-easy**
 - **Eggs Benedict**
 - **Techniques: Clarifying Butter, Poaching Eggs & Hollandaise Sauce**