Culinary Foundations I

Class 1: Introduction to the Kitchen; Knife Skills; Egg Cookery

Course Syllabus

- Class Schedule, Meeting Times
  - No-Class Days
  - Important Dates
- Lab Location
- Instructor Contact & Communication
- Text Book
- 3x5 Cards or a Pocket Notebook
- Computer Access
- Food and Access to Cooking Facilities

Course Syllabus: Uniform

- Required in Lab AND Lecture (No hat or apron in lecture.)
- An ICA issued Chef's Jacket, *Clean and Pressed*
- ICA Issued Checkered Chef Pants, *Clean, Pressed and Hemmed above the sole*
- Black Non-Skid Shoes, *No Canvas Shoes*
- ICA Issued Black Cook' s Hat
- Black Apron, *Clean and Pressed*
- No Make-Up and No Jewelry (including watches and wristbands).
- A Simple Wedding Band and One Stud Earring per ear are permissible.
- No Baseball Caps or Other Non-Culinary Headwear
- No Facial Studs or Tongue Piercings, No Hoop Earrings.
- An Instant Read Thermometer, Black Sharpie, Pen and *Culinary Student ID*

Uniform

- Your uniform is an indication of your professional commitment. Lack of compliance to the uniform standard will evaluated accordingly.
- "C" Uniform
  - Clean and Mostly Complete, Missing No More Than 2 Tools or Badge
- "B" Uniform
  - All the Above and Pressed, Missing No More Than 1 Tool or Badge
- "A" Uniform
  - All the Above and Creased on Sleeves and Back, 100% Complete

Uniform Suggestions

- Wash your uniform after EVERY day's use!
- Have a SPARE uniform, hat, tools, & ID and keep in your car.
- Remove stains immediately.
- Iron and create creases in the arms and a "T" in the back.

Course Syllabus: Uniform

<u>You may be dismissed from class without proper uniform.</u>

Grades

- Quizzes and Written Exams 50%
  - Online or In-Class
- Practical Skills Demonstrations 50%

All evaluations include minimum standards for sanitation, behavior, uniform and preparation. Poor sanitation, inappropriate non-professional behavior, improper uniform and/or lack of preparedness may result in overall grade deductions or dismissal from the evaluation process.

Online Resources and Quizzes

- http://www.chefodonnell.com
  - Course Content & Recipes
  - PowerPoint Presentations
  - Syllabus
- http://www.quia.com/web
  - Online Quizzes and Final Exam
  - Your instructor will assign you a unique Username and Password. This is NOT your Metro UN/PW.
  - You will have 3 chances to take each quiz. The quizzes must be completed prior to the next week's lecture.
  - Print a copy of each quiz to study for the final exam.
  - The final exam allows 1 attempt and is timed at 2 hours.

Attendance

- On time, daily attendance is REQUIRED.
- "On time" means arriving at least 5 minutes *before* the start of class.
- If you will miss a class or you're running late, notify your instructor by phone or email prior to class.
- Leaving the class early, without the instructors permission, may result in a recorded absence.

- 1st Day Absence -5% + "Zero" on Daily Grade
- 2nd Day Absence -15% + "Zero" on Daily Grade
- 3rd Day Absence Fail

Food Safety and Sanitation

- Wash Your Hands!
  - *Hand washing is the single most important means of preventing the spread of infection.*
  - Wash Your Hands Often
- Glove Use
  - Wash Hands First
  - Get the Right Fit
  - Be Task Specific
  - Avoid Cross Contamination
  - Change Gloves Often
  - Gloves are MANDITORY for handling ready-to-eat foods.

FAT TOM
Conditions Necessary for Bacteria Growth:

- **FOOD**
- **ACIDITY**
- **TEMPERATURE**
- **TIME**
- **OXYGEN**
- **MOISTURE**

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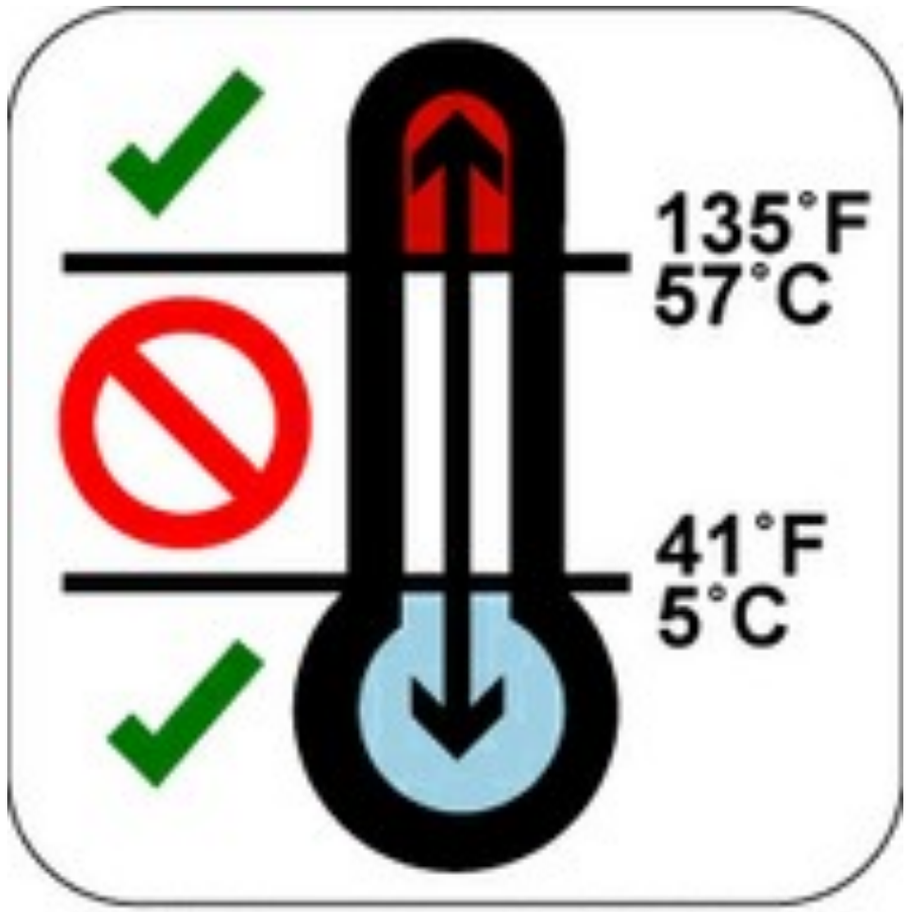
- **FOOD**
- **ACIDITY**
- **TEMPERATURE**
- **TIME**

We control these.

- **OXYGEN**
- **MOISTURE**

TDZ
Temperature Danger Zone

- Temperature Range at which Harmful Microorganisms Can Grow Rapidly
- 41˚F to 135˚F (5°C - 57°C)



Minimum Internal Temperatures for Cooking *Potentially Hazardous Foods*

- 165˚F
  - Poultry, Whole & Ground
  - Stuffed Items
  - Reheated
- 155˚F
  - Ground Meats
  - Injected Meats
- 145˚F
  - Steaks, Chops & Roasts
- 135˚F
  - Hot Food Holding Temperature

3 Major Causes of Foodborne Illness

1. Poor Personal Hygiene
   - Wash Your Hands!
   - Proper Glove Use
2. Cross-Contamination
   - Separate Raw Foods from Ready To Eat Foods
3. Time-Temperature Abuse
   - Minimize Time in TDZ
4. ?
5. ?

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   - Separate Raw Foods from Ready To Eat Foods
3. Time-Temperature Abuse
   - Minimize Time in TDZ
4. Purchasing Food from Unsafe Sources
5. Contaminated Equipment

Personal Safety

- Preventing Burns
  - Use a DRY side towel or oven glove.
- Cuts
  - Keep Knives Sharp
  - Practice Knife Safety
- Slips & Falls
  - Clean Spills Immediately
  - Keep pathways clear

Fire Safety

- Types of Fire Extinguishers
- PASS System
  - PULL the pin.
  - AIM low at the base of fire.
  - SQUEEZE the handle.
  - SWEEP from side to side.

Knife Safety - 8 Rules

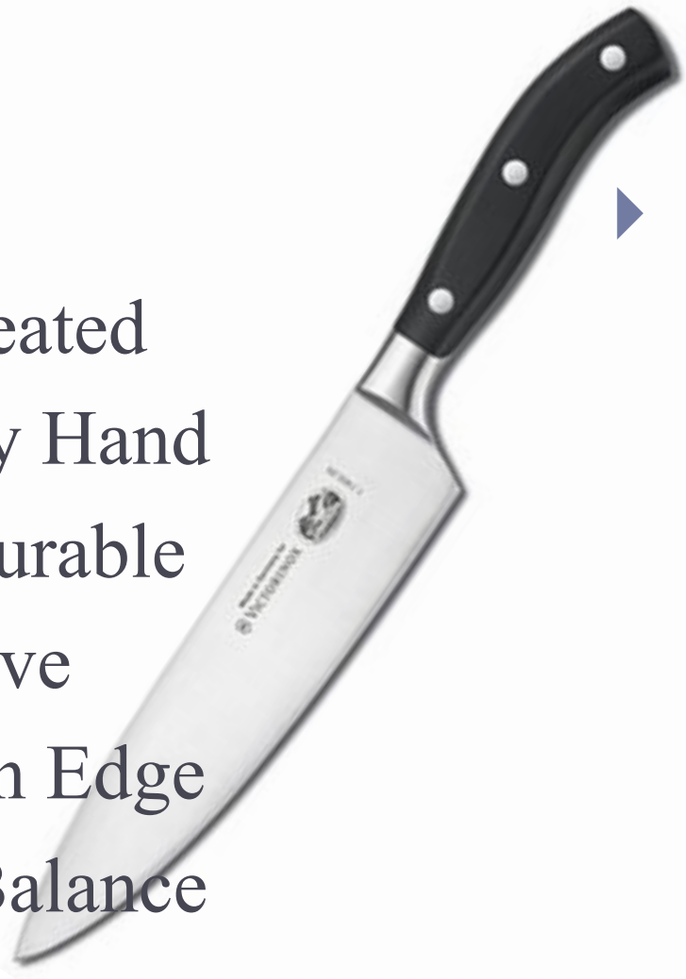
1. Use correct-sized knife for the task.
2. Cut away from yourself.
3. Use a cutting board.
4. Secure cutting boards with damp towel or non-skid pad.
5. Keep knives honed, sharp & CLEAN.
6. Carry knife point down & close. Say "sharp" when carrying a knife.
7. Never catch a falling knife.
8. Never leave a knife in a sink.

Knife Construction

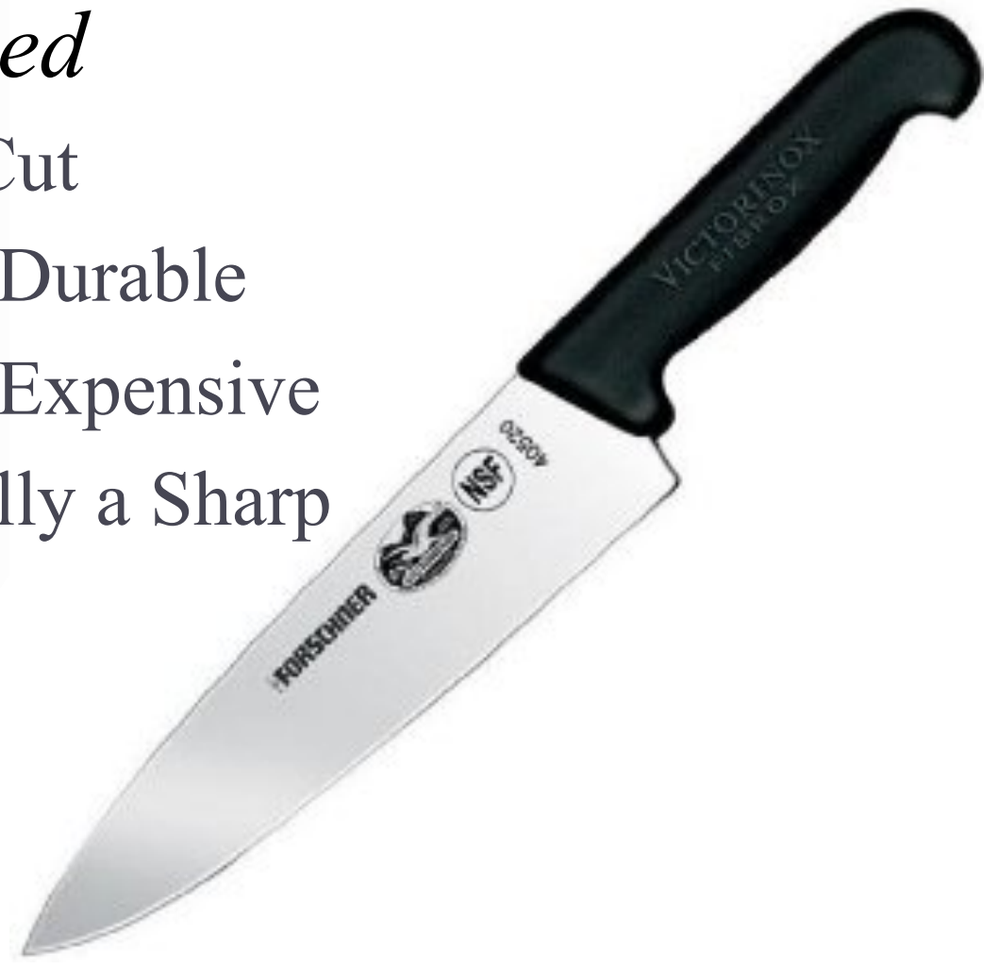
- Carbon Steel
  - Sharpens easily
  - Rusts
- Stainless Steel
  - Difficult to sharpen
  - Rust Resistant
- High-Carbon Stainless Steel
  - Combines properties of both
- Ceramic
  - Expensive
  - Sharp (Factory Sharpening Only)
  - May break if dropped or use to pry with

Forged vs. Stamped Knives

- *Forged*
  - Heat Treated
  - Made by Hand
  - More Durable
  - Expensive
  - Holds an Edge
  - Better Balance



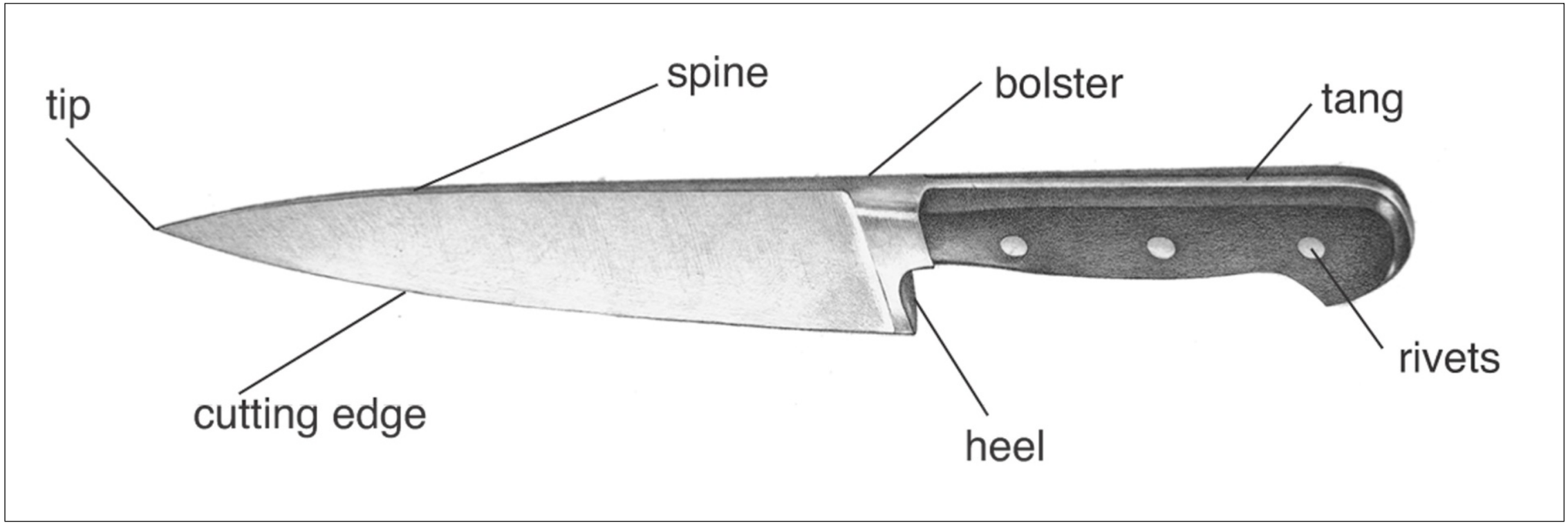
- *Stamped*
  - Die Cut
  - Less Durable
  - Less Expensive
  - Equally a Sharp



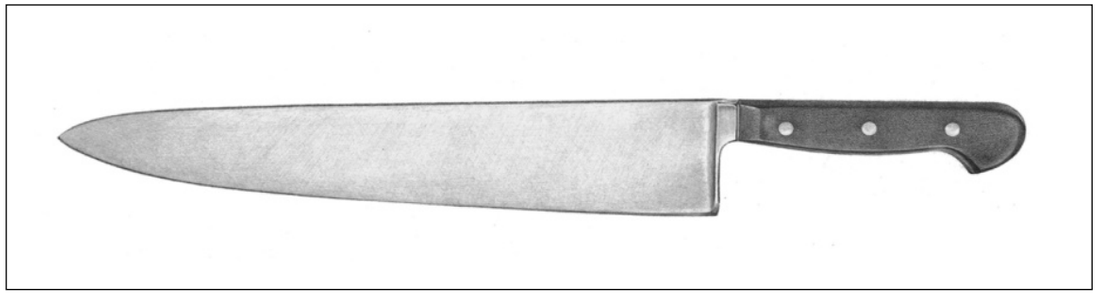
Handles

- Wood
  - High Maintenance
  - Can Crack and Harbor Bacteria
- Plastic
  - Sanitary
  - Break or Cracks Easily
- Polyoxymethylene & Composites
  - Commercial Grade
  - Very Durable
  - Sanitary

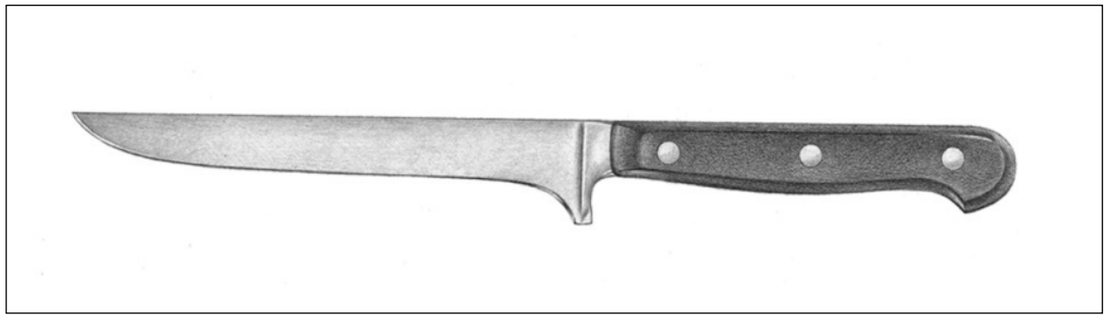
Parts of a Knife



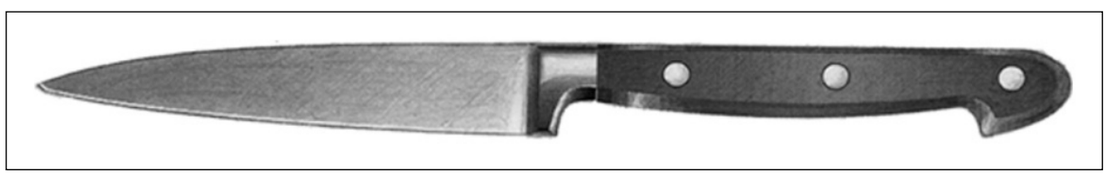
Types of Knives



French or Chef's Knife

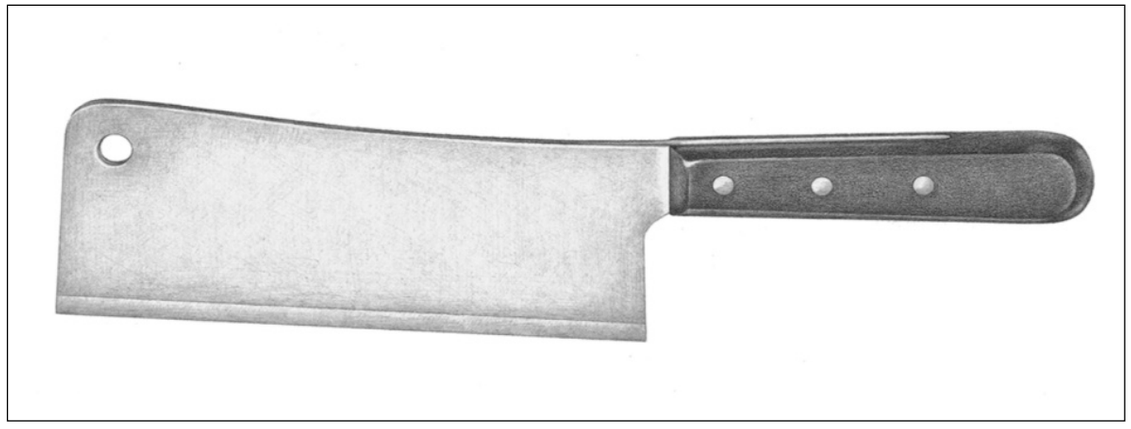


Boning Knife

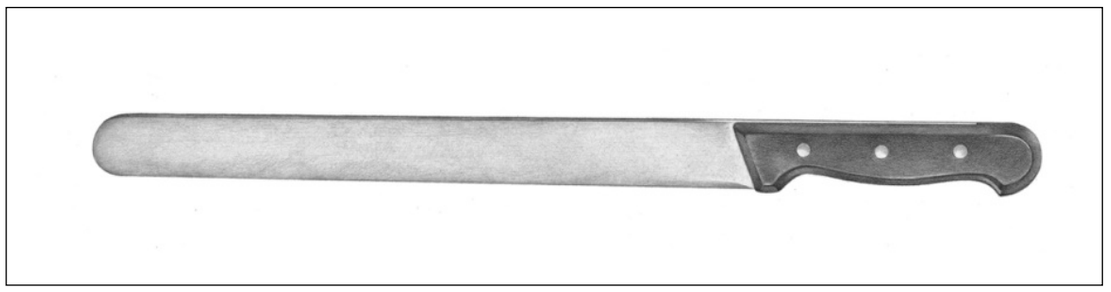


Paring Knife

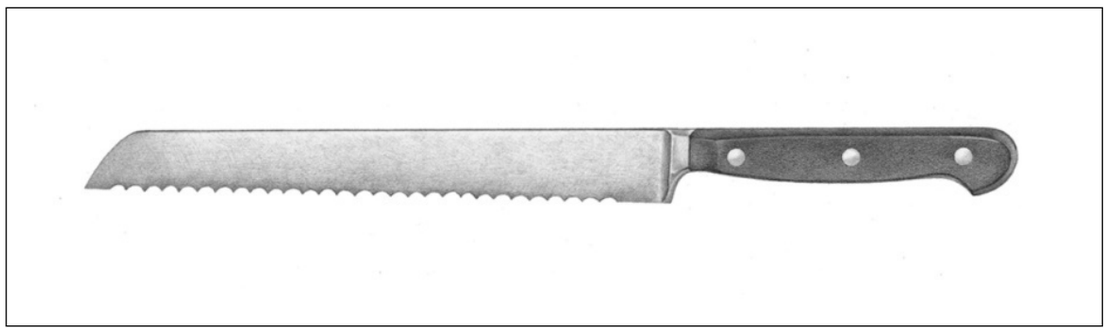
Types of Knives, con't.



Cleaver



Slicer



Serrated (Bread) Knife

Maintenance of Knives

- Cleaning
  - Clean & Sanitize by hand…at your station. *(DO NOT BRING YOUR KNIFE BACK TO THE SINK!)*
  - Dry
- Storage
  - Protect Blade
  - Protect You
  - Sanitary

How do you clean?

Washing & Storing

- Lay blade on edge of table
- Wash & Sanitize each side
- Dry
- Cover Blade with Plastic Guard
- Store in Roll or Toolbox

Sharpening vs. Honing

- Sharpening *removes* metal to form a fine edge
- Sharpen knives 1-12 times a year
- A "Whetstone" is for Sharpening
- Honing *straightens* a sharp edge
- Hone a knife before every use
- A "Steel" is for Honing

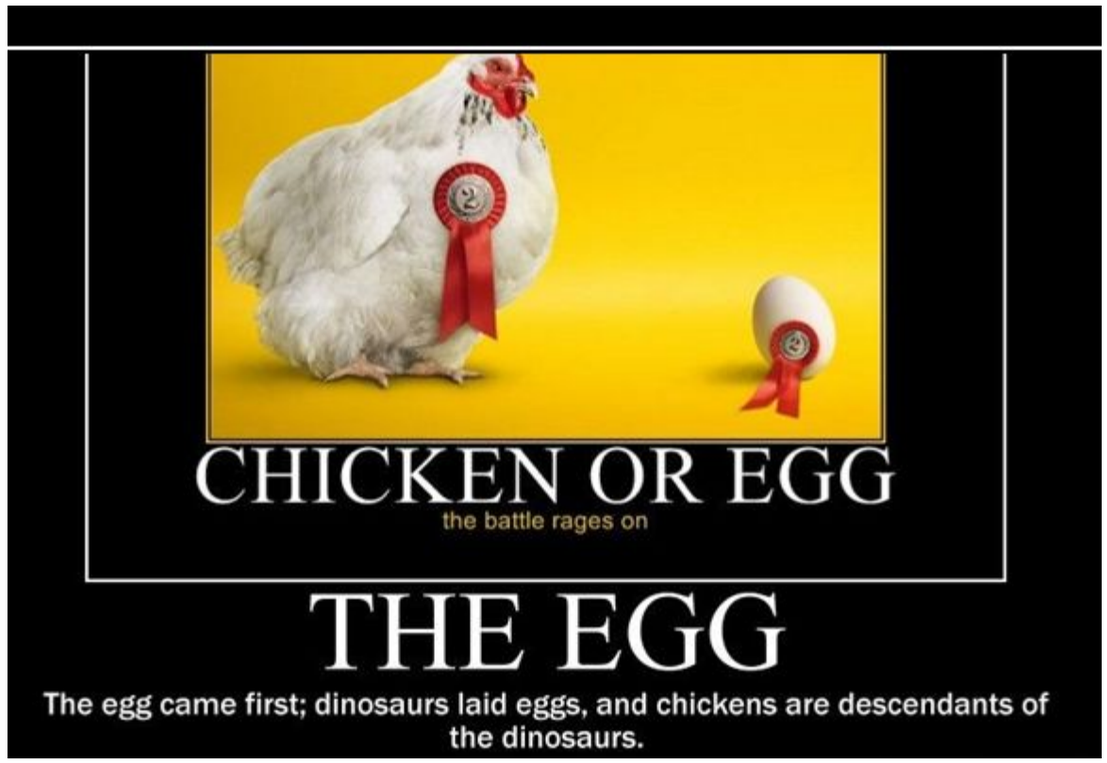
Types of Steels

- Steel
- Diamond Steel
- Ceramic (Sharpening) Steel

The Egg

What came first, the chicken or the egg?

Which came first, the chicken or the egg?



"Eggs existed long before chickens," according to *On Food and Cooking: The Science and Lore of the Kitchen* by Harold McGee. "The first eggs were released, fertilized, and hatched in the ocean. Around 250 million years ago, the earliest fully land-dwelling animals, the reptiles, developed a self-contained egg with a tough, leathery skin that prevented fatal water loss. The eggs of birds, animals that arose some 100 million years later, are a refined version of this reproductive adaptation to life on land. Eggs, then, are millions of years older than birds. Gallus domesticus, the chicken more or less as we know it, is only a scant 4 or 5 thousand years old."

7 Egg Functions

1) Binder (Meatloaf)
2) Thickener (Custards)
3) Coating (Egg Wash)
4) Color (Yellow Cake)
5) Flavor (Egg Noodles)
6) Leavening (Egg Foams, Meringues)
7) Emulsification (Hollandaise)

3 Important Principles of Egg Cookery

1. Eggs require GENTLE heat and gradual temperature change.
    1. "Hard" (and FAST) cooking vs. Soft cooking a PROTEIN
2. Recognize the power of an egg to TRANSFORM a dish.
    1. Egg on Salad
    2. Asparagus with a Hollandaise
3. Understand the egg's impact on TEXTURE.
    1. Egg whites whipped to peaks as a LEAVENER
    2. Egg Yolks as an EMULSIFIER
    3. Whole Eggs form a Custard

Custards

- 3 Types
  - Whole-Egg
  - Yolk Only
  - Pourable
- Sweet or Savory
  - Bread Pudding
  - Quiche
  - Cheesecake
  - Vanilla Sauce (Crème Anglaise)
  - Eggnog
- Ratio

Softer

  - 1 Large Egg to ½ - ¾ cup of liquid (ex. Milk and Cream)

Firm

Custards, con't.

- Ratio

  - 1 Large Egg to ½ - ¾ cup of liquid (ex. Milk and Cream)

  - Plus Sugar, and Vanilla = Crème Caramel
  - Omit Sugar, add Salt, Onion, Bacon and Pour into a pie crust = Quiche.
- Benefit by GENTLE cooking, i.e. in a water-bath
- Yolk-Only Custards
  - Soft, Rich and Deep Flavor
  - Ex. Crème Brûlée, Lemon Curd
- Pourable Custards
  - Hollandaise, Béarnaise, Egg Nog

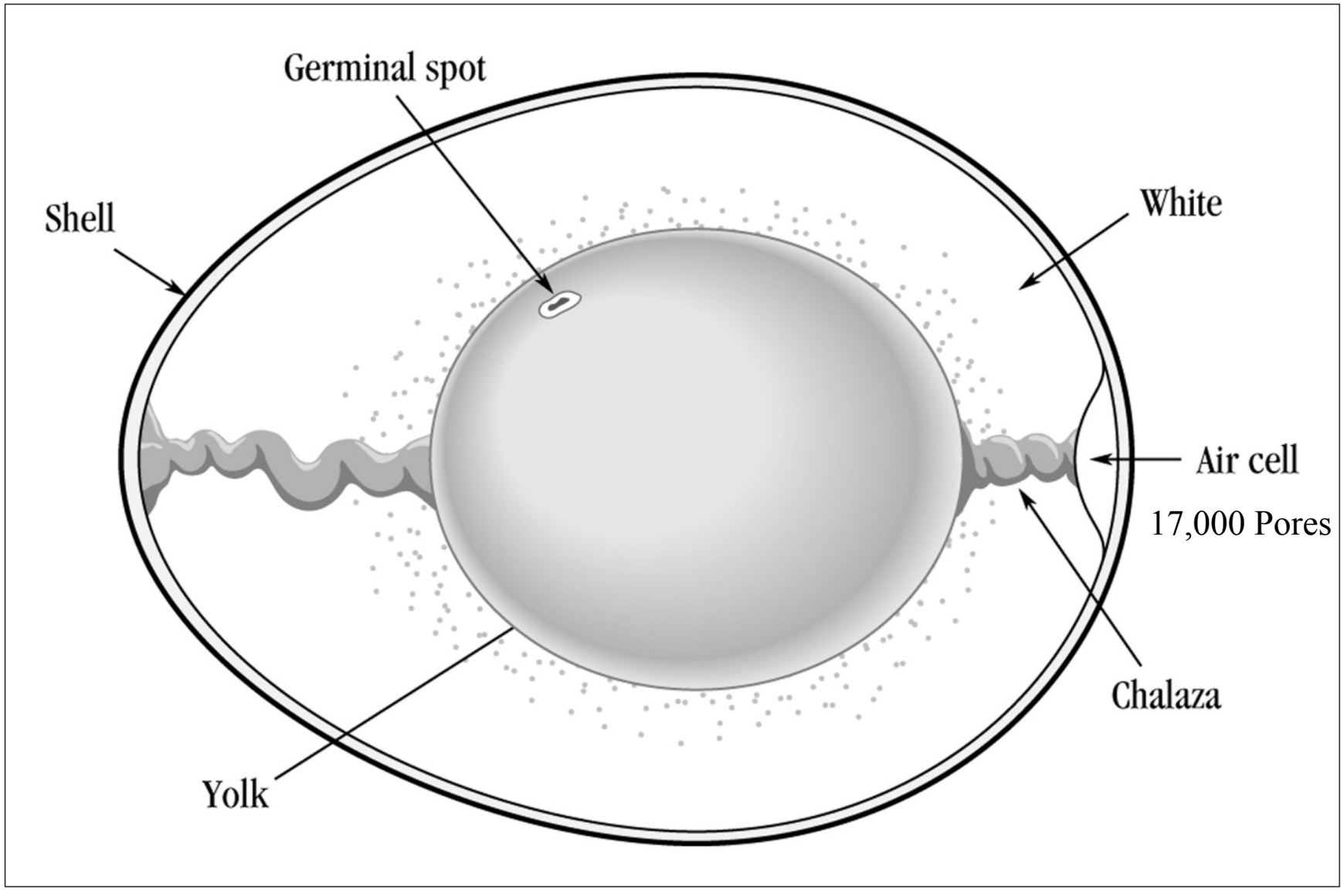
Egg Whites (Albumen)

- Thick and Thin
- Mostly Protein
- The "egg-taste" in eggs, due to sulfur in whites
- Important in making FOAMS
  - Cakes with egg white = biscuit
  - Soufflé, *"to breathe" fr.*
  - Meringues

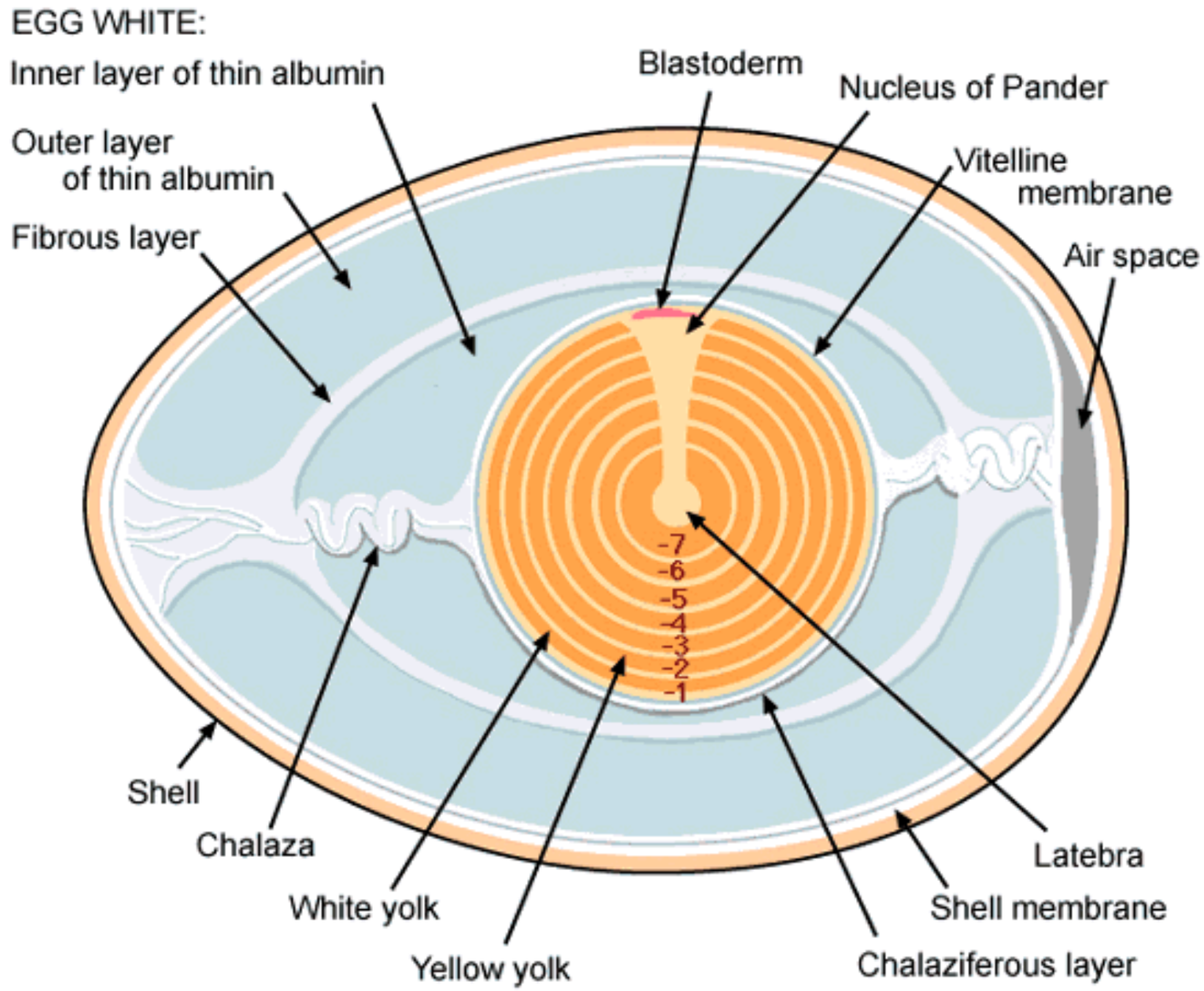
Reading the Egg Carton

- Natural
  - Tells you almost nothing; every raw chicken egg is "natural."
- Cage-Free
  - Means the hens were not confined to cages. But many "cage-free" birds never leave crowded barns.
- Free-Range
  - May have VERY limited access outside
- Organic
  - Indicates cage-free, free-range and eats an organic vegetarian diet, free of hormones and antibiotics
- Pastured
  - Expensive and hard to find. Birds roam and forage, are healthier and eggs can taste better.

Egg Composition



Egg Composition (For the Poultry Science Major)



Egg Size	Oz. Per Dozen
Jumbo	30
Extra Large	27
Large	**24**
Medium	21
Small	18
Peewee	15

For cooking purposes, eggs are large (2 oz).

Nutrition (1 Large Egg)

- Calories: 70
- **Cholesterol: 195 mg**
  - *What is the RDA for Cholesterol???*
- Total Fat: 5 g
- Protein: 6 g

Nutrition Facts

Per 1 large egg (53 g)

Amount	% Daily Value
Calories 70	
Fat 5 g	**8** %
Saturated 1.5 g + trans 0 g	**8** %
Cholesterol 195 mg	
Sodium 65 mg	**3** %
Carbohydrate 1 g	**1** %
Fibre 0 g	**0** %
Sugars 0 g	
Protein 6 g	

Vitamin A	10 %	Vitamin C	0 %
Calcium	2 %	Iron	6 %
Vitamin D	15 %	Vitamin E	15 %
Riboflavin	15 %	Niacin	8 %
Vitamin B_{12}	50%	Folate	15%

Nutrition (1 Large Egg)

- Calories: 70
- **Cholesterol: 195 mg**
  - *No "RDA" just recommend less than 300 mg per day.*
- Total Fat: 5 g
- Protein: 6 g

Nutrition Facts

Per 1 large egg (53 g)

Amount	% Daily Value
Calories 70	
Fat 5 g	**8** %
Saturated 1.5 g + trans 0 g	**8** %
Cholesterol 195 mg	
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Fibre 0 g	**0** %
Sugars 0 g	
Protein 6 g	

Vitamin A	10 %	Vitamin C	0 %
Calcium	2 %	Iron	6 %
Vitamin D	15 %	Vitamin E	15 %
Riboflavin	15 %	Niacin	8 %
Vitamin B_{12}	50%	Folate	15%

Grading and Storage

Grading

- Eggs are graded by the USDA or a state agency
- Graded AA, A or B

- Based on interior and exterior qualities, not size

Storing

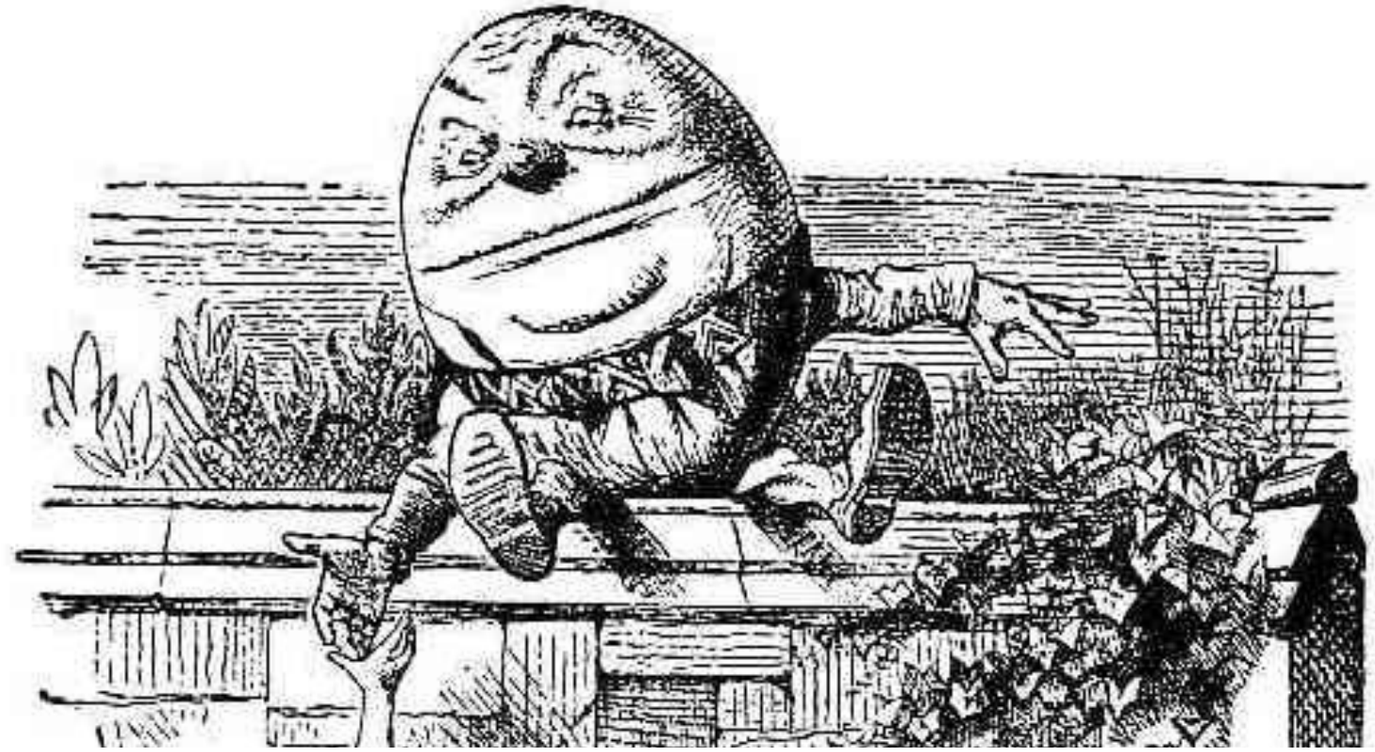
- Store at a temperature of 40°F
- How long an egg is stored affects its appearance but not its nutritional value
- Fresh unshelled eggs can be stored for 4–5 weeks past the packing date

Brown vs. White Eggs

- Hens with white feathers and white earlobes will lay white eggs
- Hens with red feathers and matching-colored earlobes give us brown eggs.
- No nutritional difference

Egg Safety

- Eggs are potentially hazardous food
- Inadequate cooking or improper storing may lead to food-borne illness
- Eggs can be pasteurized at 140°F for 3½ minutes



Egg Products and Substitutes

- Food service operations can purchase eggs in many different forms
  - Whole eggs
  - Whites only
  - Yolks only
    - Fresh or frozen

- Egg substitutes were created for those who are concerned about cholesterol
  - Soy- or milk-based
  - Real egg white, with the yolk removed

Flats and Cases

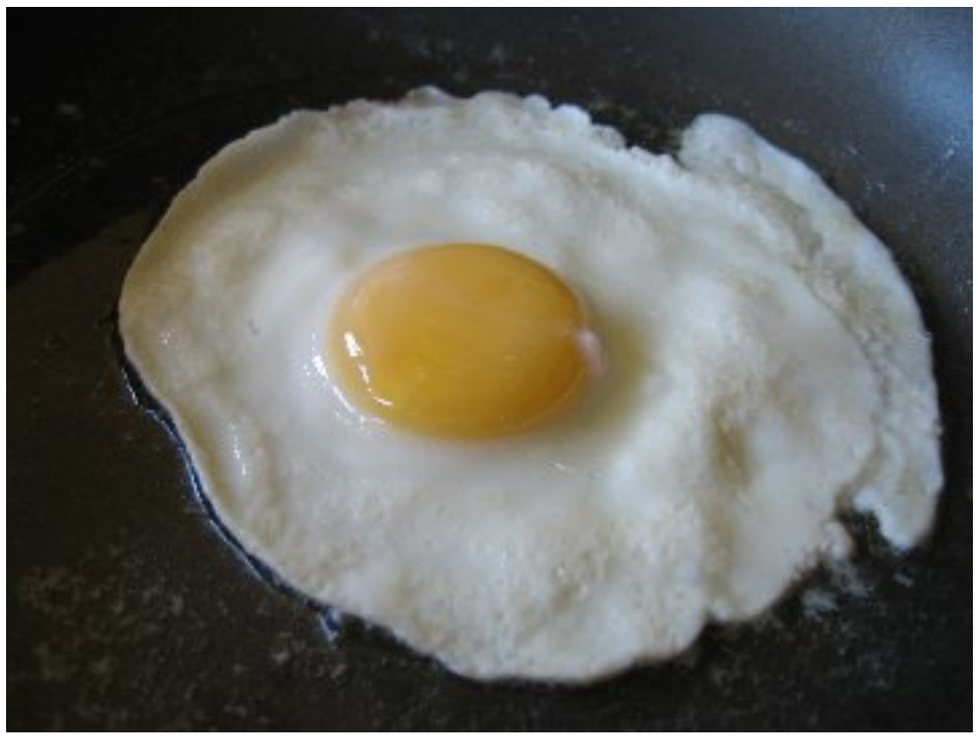
- Flat (30 eggs or 2 ½ dozen)

- Case or Box (15 or 30 dozen)
- 6 or 12 Flats
- 180 or 360 Eggs

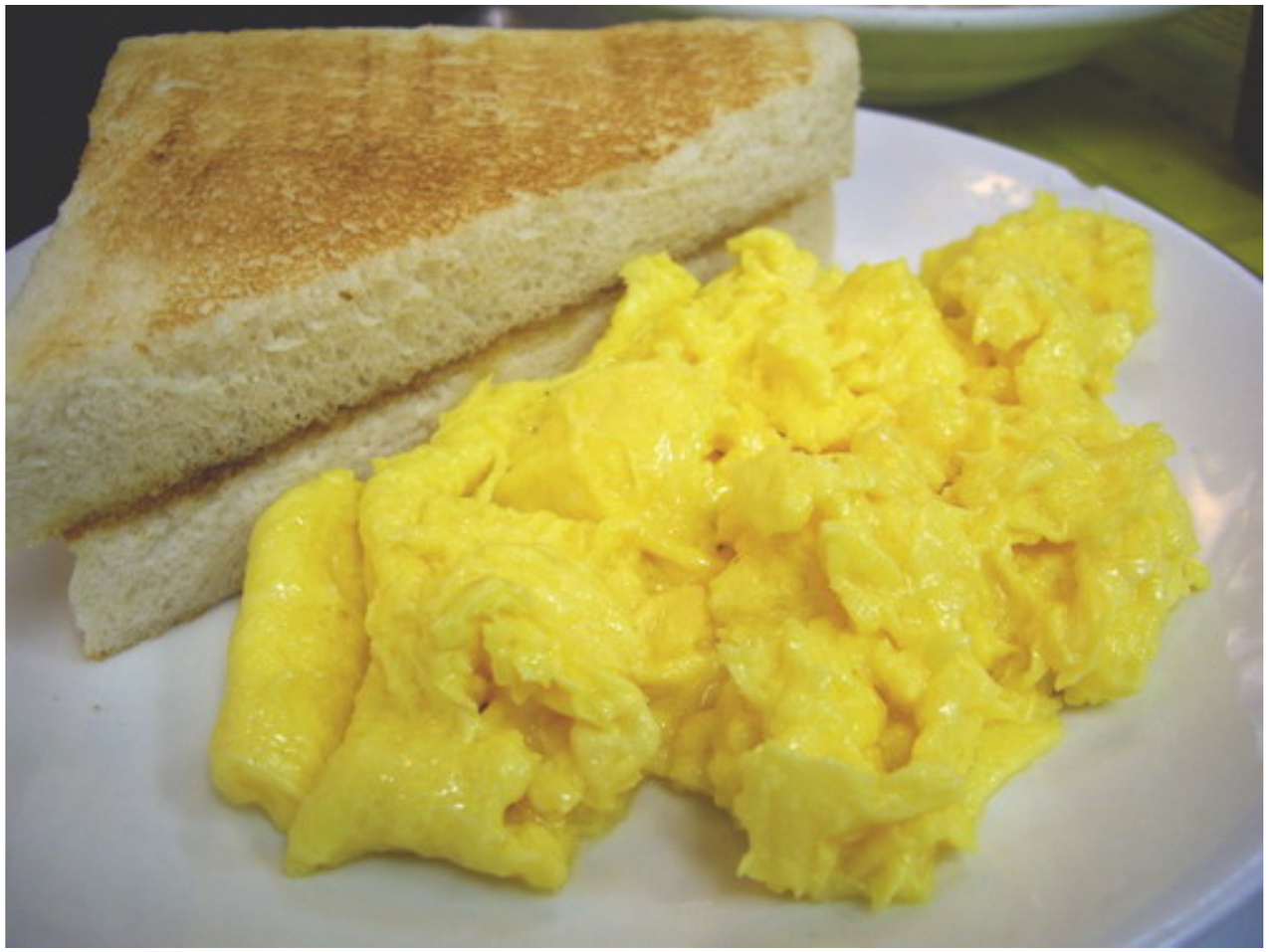
Egg Cooking Methods

- Baking
  - Quiche
  - Shirred
- Sautéing
  - Scrambled
  - Omelet
    - French-style omelet
    - Frittata
- Pan-frying
  - Sunny side up, over easy, over medium, over hard
  - Basted

Fried: Sunny Side Up & Over Easy



Fried: Scrambled

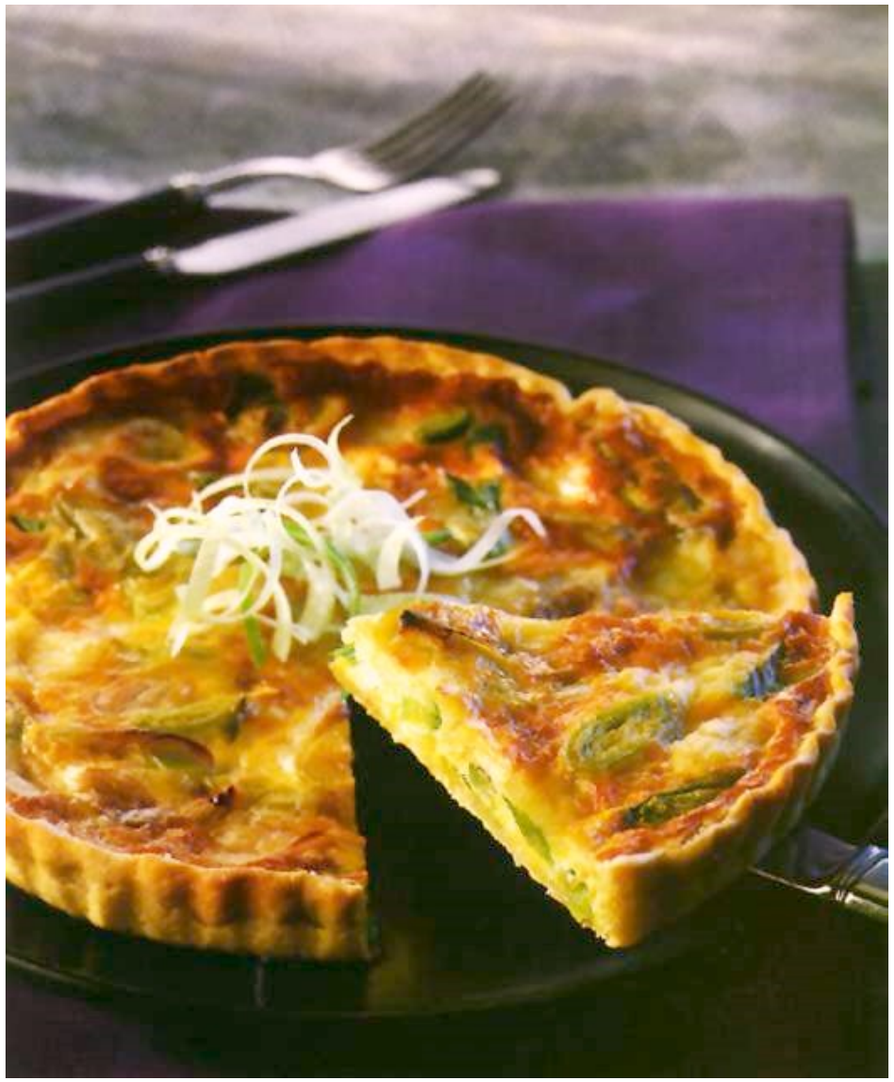


French Scrambled

Cooked over very low-heat (double-boiler) with a little cream and butter and stirred constantly. Produces a very fine and soft curd.

Scotch Egg

Quiche, Frittata & Tortilla



Baked or Shirred Eggs *(Oeufs en cocotte)*

Soufflés, Sweet or Savory

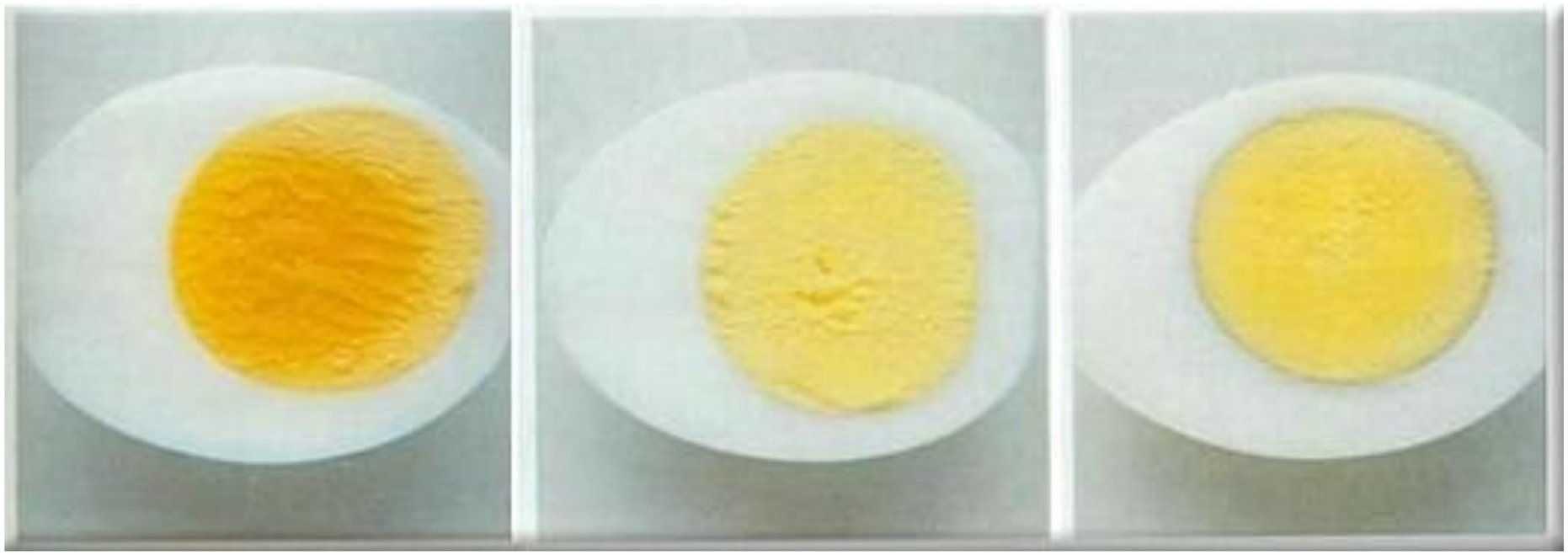
- Base + Beaten Egg Whites
  - Base may be Vegetable Puree or Béchamel for Savory
  - Pastry Cream for Sweet
  - Egg Whites give Volume, Lift and Lightness
  - Delicate (Deflate Easy!)

French & American Omelets

Moist-Heat Cooking Methods

- Soft-cooked
  - *Simmered* 6–8 minutes in shell
- Hard-cooked
  - *Simmered* 12–15 minutes in shell
- Poached
  - *Poached* 6–8 minutes without shell

Hard-Cooked Eggs

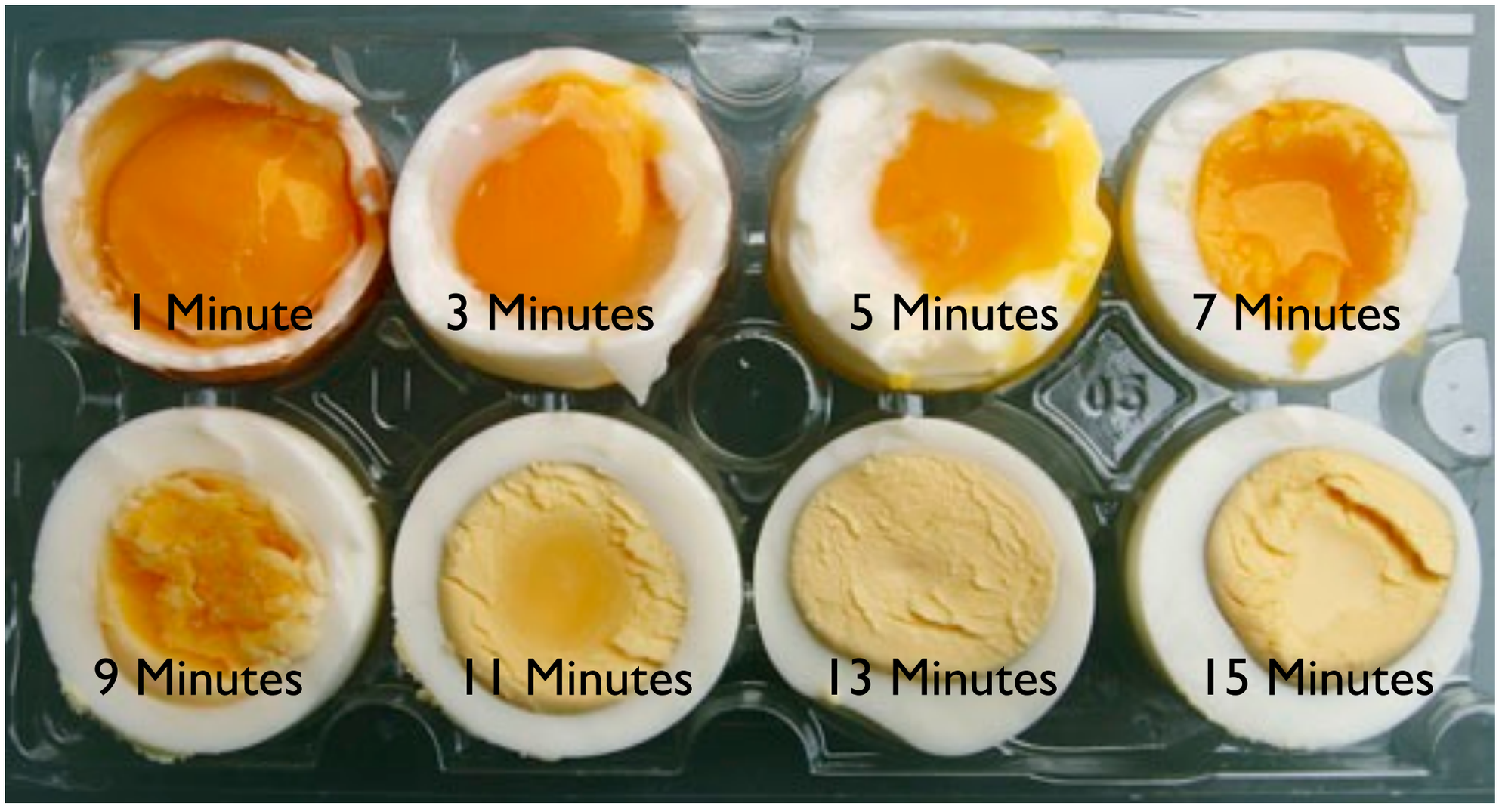


9 Minutes
Firmly Set
Tender Yolk

12 Minutes
Firmly Set

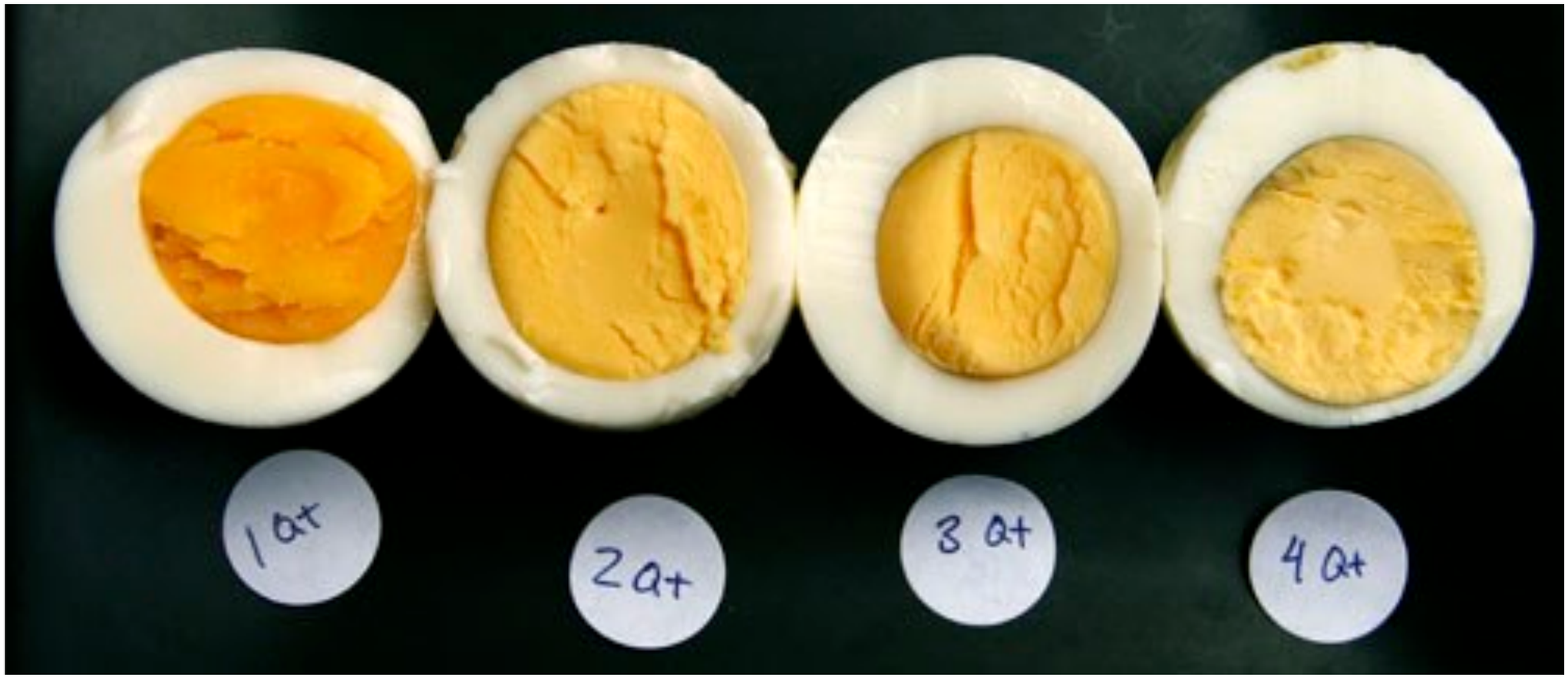
15 Minutes
Overcooked

Cooked Eggs


1 Minute
3 Minutes
5 Minutes
7 Minutes
9 Minutes
11 Minutes
13 Minutes
15 Minutes

Hard Cooked Eggs

Started with various amounts of cold water, brought to just a simmer, removed from the heat and sat in the volume of water for exactly 10 minutes each.



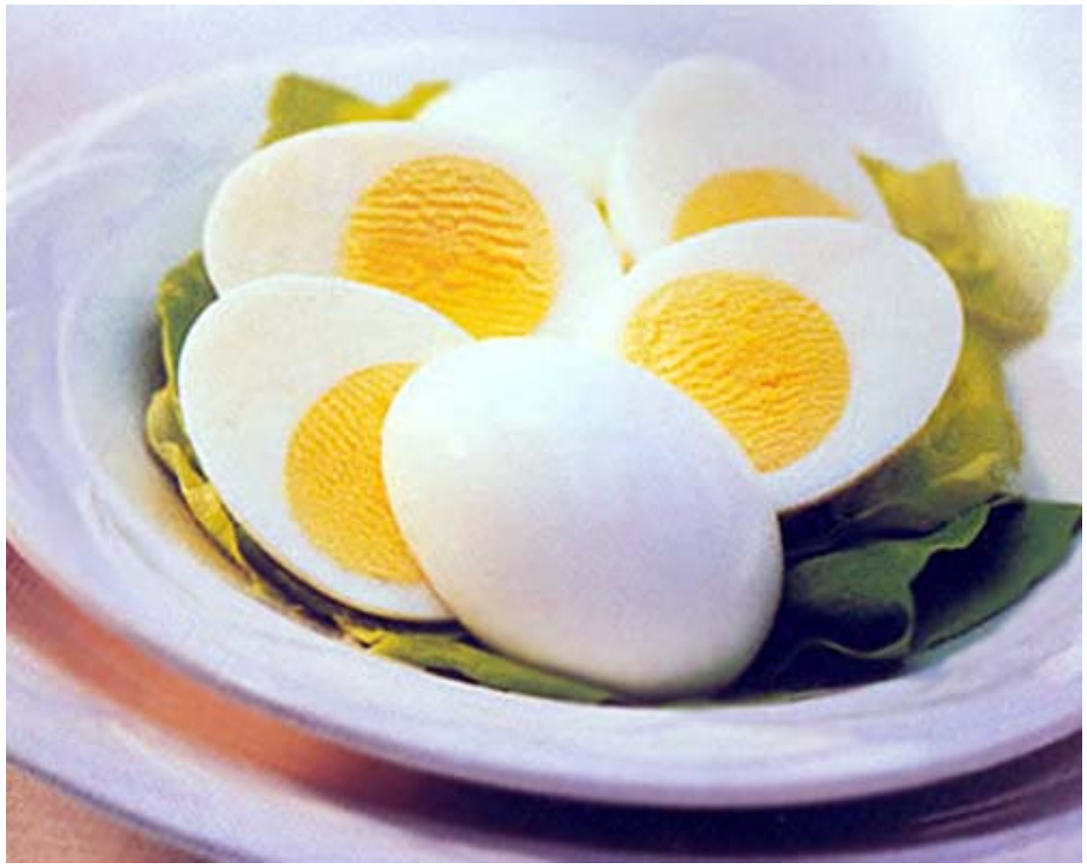
Why did the 4 quart over cook?

Hard Cooked Eggs

Started in 1.5 quarts of cold water, removed from heat. One egg was removed after 10 minutes and one was left in the water for an additional 30 minutes.

Why are they virtually the same?

Hard & Soft-Cooked Eggs

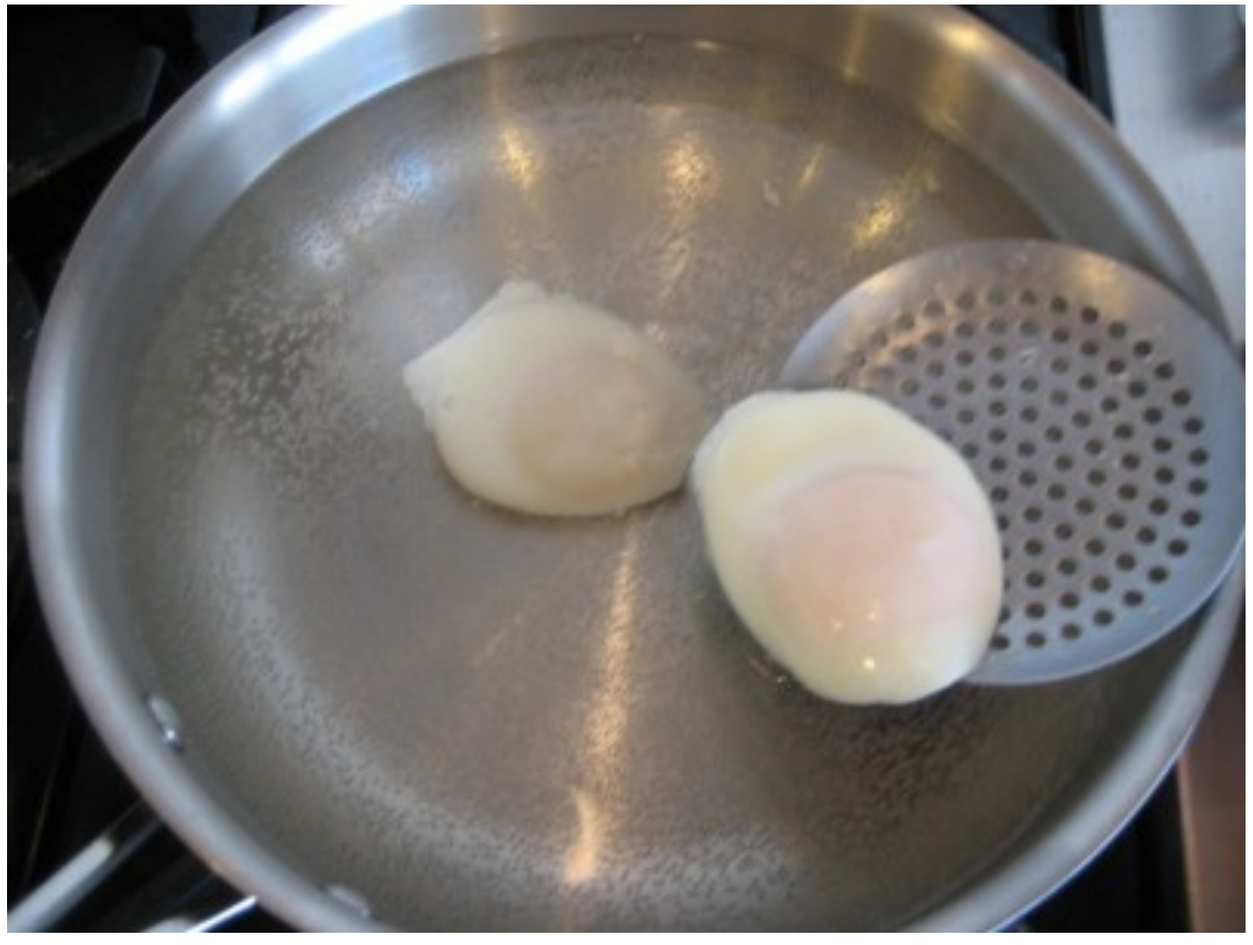


Poached Egg

(Prosciutto Wrapped Grilled Asparagus a Soft- Poached Egg with a Grapefruit & Lemon Beurre Blanc)

Cooking Tip:

- When poaching an egg, break the egg into a slotted spoon. The thin white will fall through while the thick with remains. Discard the thin white. It is the thin white that makes the stringy "egg drop soup" appearance in the poaching liquid and makes for an less attractive poached egg.



Class 1 Lab

Each Student will Demonstrate to Standard:

- Proper Work-Station Set-up & Mise en Place
- Proper Knife Grip and Guiding Hand Placement
- Proper Chopping and Slicing Motion
- Chiffonade
- Rondelle & Bias
- Oblique Cut
- Garlic Mince and Paste
- Parsley Minced and Rinsed

Each Student will Prepare to Standard *(one each)*:

- Sunny-Side Up Egg
- Over-Easy Egg
- Poached Egg
- Hard-Cooked Egg
- Soft-Cooked Egg
- 3-Egg French (Rolled) Omelet
- Shirred Egg