

# Meat Products & Cooking Principles



**FACT CHECK:**

**HOW DOES MEAT IN CASES  
STAY BRIGHT RED?**



# MEAT PRODUCTS



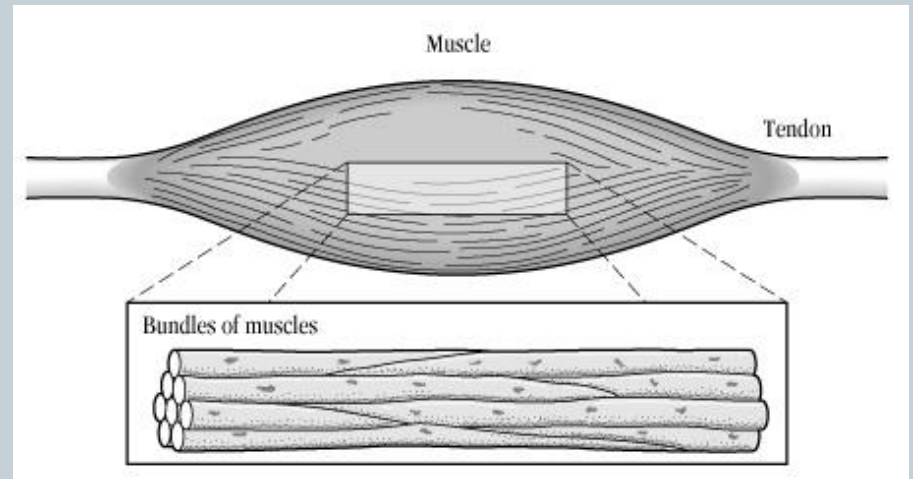
- Primarily
  - ✦ Water
  - ✦ Protein
  - ✦ Fat
  - ✦ Minerals
- In lesser amounts
  - ✦ Vitamins
  - ✦ Pigments
  - ✦ Enzymes



# 3 TYPES OF PROTEINS IN MEAT



- **Muscle fibers**
  - Each major muscle in the animal body has been named.
  - Knowing the muscles can help in the identification of the cut of meat.
- **Myoglobin**
  - Deep red pigment
- **Connective tissue**



# CONNECTIVE TISSUE



- Binds the muscle cells together in various sized bundles
- Collagen (protein found in connective tissue)
  - ✦ Tenderized with moist heat (poaching, braising, etc)
  - ✦ Tissue will take higher temperatures to break down as the animal gets older
  - ✦ Problem: More heat, more tissue fibers start to toughen
  - ✦ Meat with little connective tissue can be prepared with dry heat (grilling, roasting, etc) and shorter cooking times
  - ✦ High amounts of connective tissue-
    - Can use marinades
      - Acid breaks down tissue

# Tenderness



- Less tender
  - ✦ Higher amounts of connective tissue
  - ✦ Older animal
  - ✦ Cuts from areas that were used for locomotion
- More tender
  - ✦ Young animal
  - ✦ Marbled
  - ✦ Little used muscles

# Fat



- **Varies based on**
  - Breed
  - Method of feeding animal
  - Cut
- **Brittle hard fats**
  - Higher percent of saturated fat
- **Softer fats**
  - More unsaturated

# Processed Meat



- Definition
  - Meat that has been changed by treatments that include:
    - ✦ Mechanical
    - ✦ Chemical
    - ✦ Enzymatic
  - Taste, appearance, and frequently the keeping quality are altered.



# Restructured Meats



- Meat that has been cut, flaked, chopped, formed then “restructured” into the preferred shape
  - ✦ Many chicken nuggets or chicken patties
  - ✦ Some deli meats
  - ✦ Canadian “style” bacon
  - ✦ Many fish sticks

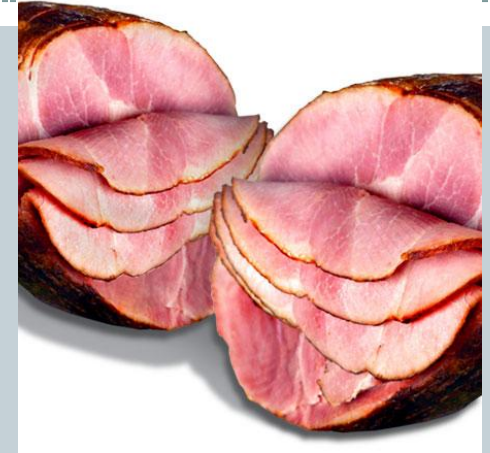




# Cured Products



- Common curing ingredients
  - Salt
    - ✦ Technically only required ingredient
  - Phosphates
    - ✦ Retains moisture and inhibits rancidity
  - Nitrate and Nitrites
    - ✦ Reduces botulism risk, retards rancidity, fixes color
  - Water
  - Sugar
  - Spices
  - Fat
  - Extenders and Binders
    - ✦ Such as milk, starch, soy, etc.



# COOKING WITH PROTEIN



**Blue rare** (115F)- seared on the outside, completely red throughout. Meat remains gel-like in texture and difficult to chew; juices are not yet flowing freely.



**Medium** (134F) - seared outside, 25% pink showing inside. Much drier and tougher than *The Perfect Steak*, but still palatable.



**Rare** (120F)- seared and still red 75% through the centre. Once the heat transfer is completed during the resting period, this steak will achieve *The Perfect Steak* - tender & juicy.



**Medium well** (150F) - done throughout with a slight hint of pink. Past the point of no return.



**Medium rare** (126F)- seared with 50% red centre. Just passed the point of *The Perfect Steak*.



**Well done** (160F) - 100% brown. Waste of a good quality steak.

# MAILLARD REACTION



- The reaction between proteins and carbohydrates that causes food to brown

