HAND WASHING: WHAT’S THE BIG DEAL
Funding

• College of Human Sciences Heddleson Grant
• “Equipping Iowa State University Families Extension specialist with food safety knowledge to impact Iowans lives”
Importance of Handwashing

• Humans are the major source of food contamination
• Hands, hair, breath, perspiration are major sources of contamination
• Personal hygiene is important to ensure cleanliness
• Health plays an important role as well
  – Sickness can contaminate foods
Health

• Human Illnesses can be transferred to food
  – Hepatitis A and Norwalk Viruses
  – Unclean hands after sneezing can cause contamination

• People can become carriers
  – No symptoms of illness but still sick
  – Common to be a carrier of *Salmonella* and *Staphylococci*
Microorganisms Commonly Harbored by Humans

• Streptococci
  – These organisms are commonly harbored in the human throat and intestines
  – Responsible for food-borne infections as well as secondary infections in humans

• Staphylococci
  – Many people harbor pathogenic forms of this bacteria as natural residents of their skin flora
Streptococcus spp

- Not a major foodborne illness
- Linked to “Strep throat”
- Found: skin, mucous membrane, GI track of humans and animals
- Opportunistic pathogen
- Infectious dose is 1,000 organisms
- Last about 1 to 3 days
- High fever, sore, inflamed throat, headaches, nausea
Staphylococcus aureus

- 32 species of Staphylococcus
- Sources: environmental, human, and animal contamination
- Causes food poisoning and toxic shock syndrome
- Produces an enterotoxin
- One of the most resistant bacteria in dry state
Staphylococcus aureus

- Growth temperature: 7 to 47.8°C (optimum 35°C)
- pH: 4.5 to 7.5 (optimum 7-7.5)
- Water activity: as low as 0.83 (optimum 0.99)
- Intoxication dose is less than 1.0 microgram
  - 1 to 7 hour onset time
- Population dose of 100,000 organisms/g
Microorganisms Commonly Harbored by Humans

• Intestinal Microorganisms
  – *Salmonella*, *Shigella*, *E. coli*, cholera, hepatitis, infectious intestinal amoebas
  – Can be carried after illness or with no symptoms of illness
  – Most probable source of food-borne infection from humans
Hand Washing

• Up to 25% of food-borne illnesses can be attributed to poor hand washing
  – Most occur in food service
• Proper hand washing breaks the cycle of transmission from humans to the food
• Many types of bacteria can survive for up to 90 minutes when applied to food
Hand Sanitizers

• Reduces microbial load on the skin surface.
• Should **NOT** be used as a substitute for good hand washing!!!!
• Review of “My Paper”