

Appendix 2: Source attribution of the common *Salmonella* serovars

Below is the list of foods attributed for outbreaks caused by each *Salmonella* serotype. Foods for the top three serotypes are broken down by categories:

Serovars	Outbreak Source Attribution
S. Enteritidis	<ul style="list-style-type: none"> • Eggs: shelled eggs, eggs, egg salad, egg-based sauce (Hollandaise, mayonnaise, Béarnaise sauce, Caesar salad dressing), baked goods made with eggs, dishes made with eggs (i.e.: French toast), pancakes, eggnog, omelette, egg fried rice • Chicken: chicks, chicken (chicken lasagna, chicken wings, baked chicken, BBQ chicken, chicken kebab), chicken burrito • Pork: carne asada, pork (roast pork, grilled pork, hog roast, satay, pork chops, sausage) • Beef: beef, ground beef, meat, lamb, corned beef, deli meats, minced meat, grilled meat • Other birds meat: turkey, duck • Salads: pasta salad • Sprouts: bean sprouts, alfalfa sprouts, spicy sprouts • Fruits and Vegetables: lettuce, peas, peppers, potato salad, potato (mashed, whole, sweet potato), cantaloupe, watermelon, honeydew • Ice cream • Fish & seafood: fish, salmon, tuna, crab cakes/dishes, calamari, oysters, prawns/shrimps, mixed seafood, shellfish, whale blubber • Dairy products: butter, cheese, cream, cream cheese, macaroni and cheese, yogurt • Baked goods: bread, cake, dough, mousse, pastries, pudding, cream pies, custard, apple pie with icing, cheesecake, bread pudding, cheese sauce, cannelloni, other baked goods, pies (meringue, coconut cream), milk pudding, tiramisu • Nuts: Turkish pine nuts, almonds • Others: guacamole, baked beans, refried beans, sesame prawn toast, pasta, spaghetti, lasagna, chilli, tortilla chips, chocolate, egg or cheese dumplings, chilli relleno, orange juice, pizza, salsa, sushi, black peppers • Person-to-person: food handler, occupational exposure
S. Typhimurium	<ul style="list-style-type: none"> • Eggs: eggs, egg nog, egg salad, Hollandaise sauce, mayonnaise, meringue • Chicken: chicken (includes curry chicken, chicken liver, chicken stock, BBQ chicken, fried chicken, chicken teriyaki), young poultry • Pork: ham, pork, pork/chicken rolls, BBQ pork, carnitas, salami, sausage • Beef: beef, beef jerky, ground beef, hamburger • Other bird meats: pigeon meat, ready-to-eat turkey • Salads: Caesar salad, coleslaw, pig ear salad, fruit salad, pasta salad, pigs ear salad, potato salad, salad dressings, rice salad, Thai salad • Sprouts: alfalfa and clover sprouts, clover sprouts • Fruits and vegetables: cantaloupe, carrots, lettuce, mango, onions, tomatoes, watermelon • Ice cream • Fish and seafood: anchovies (dried), minced fish balls, crab, fish, fish cakes, prawn soup, salmon • Dairy products: cheese (raw milk), cream, milk (raw and pasteurized), milk pudding,

	<p>yogurt</p> <ul style="list-style-type: none"> • Baked goods: bakery products, bakery items, bread, cake, cheesecake, cream and custard cakes, custard, flour, French Toast, lemon dessert, mango pudding, mousse, pancakes, pie, pudding, tiramisu • Chocolate • Seeds, tahini, nuts or nut butter: almonds, halva, hummus, peanut butter • Others: baked beans/chili, burrito, chilli, spring rolls, deli meats, dips, fried rice, goat meat, guacamole, kebab, lamb liver, lasagna, nachos, orange juice, pizza, ravioli, rice, fried rice, sesame seed candy, taco, tartar sauce, turtle meat • Person-to-person: food handler, pate, tofu • Animals: cats, farm animals, hamster contact, hedgehogs, owl pellets, rodents, turtle contact • Waterborne: drinking water, tap water, well water
S. Heidelberg	<ul style="list-style-type: none"> • Eggs: eggs, Hollandaise sauce, mayonnaise, meringue • Chicken: frozen chicken entrees, chicken teriyaki, curry chicken, chicken sandwich, kosher broiled chicken livers • Pork: ham, pig roast, pork • Beef: hamburger, beef stew • Other bird meats: turkey, turkey sandwich, ground turkey • Salads: potato salad, Caesar salad • Fruits and vegetables: melon • Fish and seafood: seafood lasagna, salmon • Dairy products: cheese, cheesecake, milkshake • Baked goods: cake, pie • Seeds, tahihi, nuts or nut butter: hummus • Others: chilli relleno, macaroni and cheese, pasta, taco, tapioca pudding, tortillas, refried beans • Person-to-person: food handler
S. Thompson	beef, bread, chicken, cilantro, eggs, lettuce, peanuts, pet treats, potato salad, roast beef, salmon, tomatoes
S. Newport	Alfalfa sprouts, bean sprouts, baked beans, blueberries, burrito, cantaloupe, cheese, chicken, baked chicken, fried chicken, chilli, cilantro, clover sprout, coleslaw, eggs, fruit salad, ground beef, guacamole, ham, horse meat, lettuce, mangoes, honeydew, cantaloupe, watermelon, milk (unpasteurized and pasteurized), peppers, pickles, peanuts, pork, pig roast, potato salad, roast beef, salad, sandwiches, shellfish, shrimp, taco, tomatoes, turkey (roasted turkey, smoked turkey, turkey gravy).
S. Infantis	Garbanzo beans, beef stew, chicken, eggs, falafel, fish, ground beef, kebab, meat, pork, potato salad, rice, roast beef, salad, salami, pork sausage, shrimp, pig ear dog treats, turkey, vegetable dips, young poultry
S. ssp. enterica (I) 4,5,12:i:-	Alfalfa sprouts, chicken, curry chicken, chicken pot pie, unpasteurized cream, guacamole, pork, sandwich, sausage, tortilla chips, frozen pot pies
S. ssp. enterica (I) 4,5,12:b:-	(no findings)
S. Hadar	Beef, boar meat, burrito, chicken, eggs, meat salad, BBQ pork, rabbit meat, salad, chicken salad sandwich, seafood, tiramisu, turkey, turkey burgers, turkey deli meat
S. Braenderup	Avocado, eggs, bean sprout, chicken, chicken soup, curry powder, mango, pork, salad, salsa, tomatoes
Salmonella Saintpaul	Alfalfa sprout, bean sprouts, cake, cantaloupe, chicken, clover sprouts, cucumber, eggs, ground beef, fried ice cream, enteral formula, mangoes, orange juice, pawpaw, peppers, jalapeño and serrano peppers, powdered infant formula, spices, tap water, tomatoes, turkey, turkey deli meats, watermelon, well water
Salmonella Oranienburg	Alfalfa sprouts, beef (ground), cantaloupe, chicken, cheese, chocolate candy, chocolate, fruit salad (cantaloupe & honeydew melon), gelato, green onion, iced tea, melons, squid (dried), powdered milk, pizza, pork, spices, spinach, Mexican food (specifically beef burrito, nachos and cheese)

Reference:

Doyle ME, Kaspar C, Archer J, Klos R. White Paper on Human Illness Caused by Salmonella from all Food and non-Food Vectors. Madison, Wisconsin: Food Research Institute; Dec. 2008/February 2009 [cited November 2013]. Available from http://fri.wisc.edu/docs/pdf/FRI_Brief_Salmonella_Human_Illness_6_09.pdf

Centers for Disease Control and Prevention [www.cdc.gov]. Atlanta, GA: CDC; c2013. List of Selected Multistate Foodborne Outbreak Investigations; last update 2013 Nov 15 [cited 2013 Nov 22]. Available from <http://www.cdc.gov/foodsafety/outbreaks/multistate-outbreaks/outbreaks-list.html>

Systematic review done by Judy Greig for Public Health Ontario for outbreak source attribution of 12 serovars of salmonella. Requested Nov 4, 2013. Received Nov 20, 2013. Data from 1950 to Nov 2013.

Van Doren JM, Klienmeier D, Hammack TS, Westerman A. Prevalence, serotype diversity, and antimicrobial resistance of *Salmonella* in imported shipments of spice offered for entry to the United States, FY2007–FY2009. *Food Microbiology*. 2013; 34(2): 239-251.