Appendix 10.

Food Sources of Potassium

Table A10-1. —

Potassium: Food Sources Ranked by Amounts of Potassium & Energy per Standard Food Portions & per 100 Grams of Foods

Food	Standard Portion Size	Calories in Standard Portion ^(a)	Potassium in Standard Portion (mg) ^[a]	Calories per 100 grams ^(a)	Potassium per 100 grams (mg) ^[a]
Potato, Baked, Flesh & Skin	1 medium	163	941	94	544
Prune Juice, Canned	1 cup	182	707	71	276
Carrot Juice, Canned	1 cup	94	689	40	292
Passion-Fruit Juice, Yellow or Purple	1 cup	126-148	687	51-60	278
Tomato Paste, Canned	1⁄4 cup	54	669	82	1,014
Beet Greens, Cooked from Fresh	½ cup	19	654	27	909
Adzuki Beans, Cooked	½ cup	147	612	128	532
White Beans, Canned	½ cup	149	595	114	454
Plain Yogurt, Nonfat	1 cup	127	579	56	255
Tomato Puree	½ cup	48	549	38	439
Sweet Potato, Baked in Skin	1 medium	103	542	90	475
Salmon, Atlantic, Wild, Cooked	3 ounces	155	534	182	628

Potassium: Food Sources Ranked by Amounts of Potassium & Energy per Standard Food Portions & per 100 Grams of Foods

Food	Standard Portion Size	Calories in Standard Portion ^(a)	Potassium in Standard Portion (mg) ^[s]	Calories per 100 grams ^(a)	Potassium per 100 grams (mg) ^[a]
Clams, Canned	3 ounces	121	534	142	628
Pomegranate Juice	1 cup	134	533	54	214
Plain Yogurt, Low-Fat	8 ounces	143	531	63	234
Tomato Juice, Canned	1 cup	41	527	17	217
Orange Juice, Fresh	1 cup	112	496	45	200
Soybeans, Green, Cooked	½ cup	127	485	141	539
Chard, Swiss, Cooked	½ cup	18	481	20	549
Lima Beans, Cooked	½ cup	108	478	115	508
Mackerel, Various Types, Cooked	3 ounces	114-171	443-474	134-201	521-558
Vegetable Juice, Canned	1 cup	48	468	19	185
Chili with Beans, Canned	½ cup	144	467	112	365
Great Northern Beans, Canned	½ cup	150	460	114	351
Yam, Cooked	½ cup	79	456	116	670
Halibut, Cooked	3 ounces	94	449	111	528
Tuna, Yellowfin, Cooked	3 ounces	111	448	130	527
Acorn Squash, Cooked	½ cup	58	448	56	437

Food	Standard Portion Size	Calories in Standard Portion ^[a]	Potassium in Standard Portion (mg) ^(a)	Calories per 100 grams ^(a)	Potassium per 100 grams (mg) ^[a]
Snapper, Cooked	3 ounces	109	444	128	522
Soybeans, Mature, Cooked	½ cup	149	443	173	515
Tangerine Juice, Fresh	1 cup	106	440	43	178
Pink Beans, Cooked	½ cup	126	430	149	508
Chocolate Milk (1%, 2% & Whole)	1 сир	178-208	418-425	71-83	167-170
Amaranth Leaves, Cooked	½ cup	14	423	21	641
Banana	1 medium	105	422	89	358
Spinach, Cooked from Fresh or Canned	½ сир	21-25	370-419	23	346-466
Black Turtle Beans, Cooked	½ cup	121	401	130	433
Peaches, Dried, Uncooked	¼ cup	96	399	239	996
Prunes, Stewed	½ cup	133	398	107	321
Rockfish, Pacific, Cooked	3 ounces	93	397	109	467
Rainbow Trout, Wild or Farmed, Cooked	3 ounces	128-143	381-383	150-168	448-450
Skim Milk (Nonfat)	1 cup	83	382	34	156
Refried Beans, Canned, Traditional	½ cup	106	380	89	319
Apricots, Dried, Uncooked	1⁄4 cup	78	378	241	1162
Pinto Beans, Cooked	½ cup	123	373	143	436

Potassium: Food Sources Ranked by Amounts of Potassium & Energy per Standard Food Portions & per 100 Grams of Foods

Food	Standard Portion Size	Calories in Standard Portion ^(a)	Potassium in Standard Portion (mg) ^[s]	Calories per 100 grams ^[a]	Potassium per 100 grams (mg) ^[5]
Lentils, Cooked	½ сир	115	365	116	369
Avocado	½ cup	120	364	160	485
Tomato Sauce, Canned	½ cup	30	364	24	297
Plantains, Slices, Cooked	½ cup	89	358	116	465
Kidney Beans, Cooked	½ cup	113	357	127	403
Navy Beans, Cooked	1∕2 сир	128	354	140	389

[a] Source: U.S Department of Agriculture, Agricultural Research Service, Nutrient Data Laboratory. 2014. USDA National Nutrient Database for Standard Reference, Release 27. Available at: http://www.ars.usda.gov/nutrientdata.

Appendix 11.

Food Sources of Calcium

Table A11-1. -

Calcium: Food Sources Ranked by Amounts of Calcium & Energy per Standard Food Portions & per 100 Grams of Foods

Food	Standard Portion Size	Calories in Standard Portion ^(a)	Calcium in Standard Portion (mg) ^[n]	Calories per 100 grams ^(a)	Calcium per 100 grams (mg) ^[a]
Fortified Ready-to-Eat Cereals (Various) ^(b)	¾-1¼ cup	70-197	137-1,000	234-394	455-3,333
Pasteurized Processed American Cheese	2 ounces	210	593	371	1,045
Parmesan Cheese, Hard	1.5 ounces	167	503	392	1,184
Plain Yogurt, Nonfat	8 ounces	127	452	56	199
Romano Cheese	1.5 ounces	165	452	387	1,064
Almond Milk (All Flavors) ^[b]	1 cup	91-120	451	38-50	188
Pasteurized Processed Swiss Cheese	2 ounces	189	438	334	772
Tofu, Raw, Regular, Prepared with Calcium Sulfate	½ cup	94	434	76	350
Gruyere Cheese	1.5 ounces	176	430	413	1,011
Plain Yogurt, Low-Fat	8 ounces	143	415	63	183
Vanilla Yogurt, Low-Fat	8 ounces	193	388	85	171

Table A11-1. (continued...)

Calcium: Food Sources Ranked by Amounts of Calcium & Energy per Standard Food Portions & per 100 Grams of Foods

Food	Standard Portion Size	Calories in Standard Portion ^[a]	Calcium in Standard Portion (mg) ^[s]	Calories per 100 grams ^[a]	Calcium per 100 grams (mg) ^[a]
Pasteurized Processed American Cheese Food	2 ounces	187	387	330	682
Fruit Yogurt, Low-Fat	8 ounces	238	383	105	169
Orange Juice, Calcium Fortified ^(b)	1 cup	117	349	47	140
Soymilk (All Flavors) ^[b]	1 cup	109	340	45	140
Ricotta Cheese, Part Skim	½ cup	171	337	138	272
Swiss Cheese	1.5 ounces	162	336	380	791
Evaporated Milk	½ cup	170	329	135	261
Sardines, Canned in Oil, Drained	3 ounces	177	325	208	382
Provolone Cheese	1.5 ounces	149	321	351	756
Monterey Cheese	1.5 ounces	159	317	373	746
Mustard Spinach (Tendergreen), Raw	1 cup	33	315	22	210
Muenster Cheese	1.5 ounces	156	305	368	717
Low-Fat Milk (1%)	1 cup	102	305	42	125
Mozzarella Cheese, Part-Skim	1.5 ounces	128	304	301	716

Food	Standard Portion Size	Calories in Standard Portion ^[a]	Calcium in Standard Portion (mg) ^[a]	Calories per 100 grams ^(a)	Calcium per 100 grams (mg) ^[a]
Skim Milk (Nonfat)	1 cup	83	299	34	122
Reduced Fat Milk (2%)	1 cup	122	293	50	120
Colby Cheese	1.5 ounces	167	291	394	685
Low-Fat Chocolate Milk (1%)	1 cup	178	290	71	116
Cheddar Cheese	1.5 ounces	173	287	406	675
Rice Drink ⁽⁶⁾	1 cup	113	283	47	118
Whole Buttermilk	1 cup	152	282	62	115
Whole Chocolate Milk	1 cup	208	280	83	112
Whole Milk	1 cup	149	276	61	113
Reduced Fat Chocolate Milk (2%)	1 cup	190	273	76	109
Ricotta Cheese, Whole Milk	<i>½</i> cup	216	257	174	207

[a] Source: U.S. Department of Agriculture, Agricultural Research Service, Nutrient Data Laboratory. 2014. USDA National Nutrient Database for Standard Reference, Release 27. Available at: http://www.ars.usda.gov/nutrientdata.

[b] Calcium fortified.

Appendix 12.

Food Sources of Vitamin D

Table A12-1. —

Vitamin D: Food Sources Ranked by Amounts of Vitamin D & Energy per Standard Food Portions & per 100 Grams of Foods

Food	Standard Portion Size	Calories in Standard Portion ^[a]	Vitamin D in Standard Portion (µg) ^(a,b)	Calories per 100 grams ^[s]	Vitamin D per 100 grams (µg) ^(a,b)
Salmon, Sockeye, Canned	3 ounces	142	17.9	167	21.0
Trout, Rainbow, Farmed, Cooked	3 ounces	143	16.2	168	19.0
Salmon, Chinook, Smoked	3 ounces	99	14.5	117	17.1
Swordfish, Cooked	3 ounces	146	14.1	172	16.6
Sturgeon, Mixed Species, Smoked	3 ounces	147	13.7	173	16.1
Salmon, Pink, Canned	3 ounces	117	12.3	138	14.5
Fish Oil, Cod Liver	1 tsp	41	11.3	902	250
Cisco, Smoked	3 ounces	150	11.3	177	13.3
Salmon, Sockeye, Cooked	3 ounces	144	11.1	169	13.1
Salmon, Pink, Cooked	3 ounces	130	11.1	153	13.0
Sturgeon, Mixed Species, Cooked	3 ounces	115	11.0	135	12.9

Food	Standard Portion Size	Calories in Standard Portion ^(a)	Vitamin D in Standard Portion (µg) ^(a,b)	Calories per 100 grams ^[a]	Vitamin D per 100 grams (µg) ^[e,b]
Whitefish, Mixed Species, Smoked	3 ounces	92	10.9	108	12.8
Mackerel, Pacific & Jack, Cooked	3 ounces	171	9.7	201	11.4
Salmon, Coho, Wild, Cooked	3 ounces	118	9.6	139	11.3
Mushrooms, Portabella, Exposed to Ultraviolet Light, Grilled	½ cup	18	7.9	29	13.1
Tuna, Light, Canned in Oil, Drained	3 ounces	168	5.7	198	6.7
Halibut, Atlantic & Pacific, Cooked	3 ounces	94	4.9	111	5.8
Herring, Atlantic, Cooked	3 ounces	173	4.6	203	5.4
Sardine, Canned in Oil, Drained	3 ounces	177	4.1	208	4.8
Rockfish, Pacific, Mixed Species, Cooked	3 ounces	93	3.9	109	4.6
Whole Milk ^[c]	1 cup	149	3.2	61	1.3
Whole Chocolate Milk ^[c]	1 cup	208	3.2	83	1.3
Tilapia, Cooked	3 ounces	109	3.1	128	3.7
Flatfish (Flounder & Sole), Cooked	3 ounces	73	3.0	86	3.5
Reduced Fat Chocolate Milk (2%)[6]	1 cup	190	3.0	76	1.2

Vitamin D: Food Sources Ranked by Amounts of Vitamin D & Energy per Standard Food Portions & per 100 Grams of Foods

Food	Standard Portion Size	Calories in Standard Portion ^[a]	Vitamin D in Standard Portion (μg) ^(ə,b)	Calories per 100 grams ^(a)	Vitamin D per 100 grams (µg) ^[a.b]
Yogurt (Various Types & Flavors) ^[5]	8 ounces	98-254	2.0-3.0	43-112	0.9-1.3
Milk (Non-Fat, 1% & 2%) ^[c]	1 cup	83-122	2.9	34-50	1.2
Soymilk ^[c]	1 cup	109	2.9	45	1.2
Low-Fat Chocolate Milk (1%) ^[c]	1 cup	178	2.8	71	1.1
Fortified Ready-to-Eat Cereals (Various) ^[0]	⅓-1¼ cup	74-247	0.2-2.5	248-443	0.8-8.6
Orange Juice, Fortified ^[c]	1 cup	117	2.5	47	1.0
Almond Milk (All Flavors)[c]	1 cup	91-120	2.4	38-50	1.0
Rice Drink ^[c]	1 cup	113	2.4	47	1.0
Pork, Cooked (Various Cuts)	3 ounces	122-390	0.2-2.2	143-459	0.2-2.6
Mushrooms, Morel, Raw	½ cup	10	1.7	31	5.1
Margarine (Various) ^[c]	1 Tbsp	75-100	1.5	533-717	10.7
Mushrooms, Chanterelle, Raw	½ cup	10	1.4	38	5.3
Egg, Hard-Boiled	1 large	78	1.1	155	2.2

[a] Source: U.S. Department of Agriculture, Agricultural Research Service, Nutrient Data Laboratory, 2014. USDA National Nutrient Database for Standard Reference, Release 27. Available at: http://www.ars.usda.gov/nutrientdata.
[b] 1 µg of vitamin D is equivalent to 40 IU.

[[]c] Vitamin D fortified.

Appendix 13.

Food Sources of Dietary Fiber

Table A13-1. -

Dietary Fiber: Food Sources Ranked by Amounts of Dietary Fiber & Energy per Standard Food Portions & per 100 Grams of Foods

Food	Standard Portion Size	Calories in Standard Portion ^[a]	Dietary Fiber in Standard Portion (g) ^[a]	Calories per 100 grams ^(a)	Dietary Fiber per 100 grams (g) ^[a]
High Fiber Bran Ready-to-Eat Cereal	½-¾ сир	60-81	9.1-14.3	200-260	29.3-47.5
Navy Beans, Cooked	½ cup	127	9.6	140	10.5
Small White Beans, Cooked	½ сир	127	9.3	142	10.4
Yellow Beans, Cooked	½ cup	127	9.2	144	10.4
Shredded Wheat Ready- to-Eat Cereal (Various)	1-1¼ cup	155-220	5.0-9.0	321-373	9.6-15.0
Cranberry (Roman) Beans, Cooked	½ сир	120	8.9	136	10.0
Adzuki Beans, Cooked	½ cup	147	8.4	128	7.3
French Beans, Cooked	½ cup	114	8.3	129	9.4
Split Peas, Cooked	½ cup	114	8.1	116	8.3
Chickpeas, Canned	½ cup	176	8.1	139	6.4
Lentils, Cooked	½ cup	115	7.8	116	7.9

Dietary Fiber: Food Sources Ranked by Amounts of Dietary Fiber & Energy per Standard Food Portions & per 100 Grams of Foods

Food	Standard Portion Size	Calories in Standard Portion ^(a)	Dietary Fiber in Standard Portion (g)[a]]	Calories per 100 grams ^[a]	Dietary Fiber per 100 grams (g) ^[a]
Pinto Beans, Cooked	½ cup	122	7.7	143	9.0
Black Turtle Beans, Cooked	½ cup	120	7.7	130	8.3
Mung Beans, Cooked	½ cup	106	7.7	105	7.6
Black Beans, Cooked	½ cup	114	7.5	132	8.7
Artichoke, Globe or French, Cooked	½ cup	45	7.2	53	8.6
Lima Beans, Cooked	½ cup	108	6.6	115	7.0
Great Northern Beans, Canned	½ cup	149	6.4	114	4.9
White Beans, Canned	½ cup	149	6.3	114	4.8
Kidney Beans, All Types, Cooked	½ cup	112	5.7	127	6.4
Pigeon Peas, Cooked	½ cup	102	5.6	121	6.7
Cowpeas, Cooked	½ cup	99	5.6	116	6.5
Wheat Bran Flakes Ready- to-Eat Cereal (Various)	3⁄4 cup	90-98	4.9-5.5	310-328	16.9-18.3
Pear, Raw	1 medium	101	5.5	57	3.1
Pumpkin Seeds, Whole, Roasted	1 ounce	126	5.2	446	18.4

Food	Standard Portion Size	Calories in Standard Portion ^(a)	Dietary Fiber in Standard Portion (g) ^[a]	Calories per 100 grams ^[a]	Dietary Fiber per 100 grams (g) ^[a]
Baked Beans, Canned, Plain	½ cup	119	5.2	94	4.1
Soybeans, Cooked	½ cup	149	5.2	173	6.0
Plain Rye Wafer Crackers	2 wafers	73	5.0	334	22.9
Avocado	½ cup	120	5.0	160	6.7
Broadbeans (Fava Beans), Cooked	½ сир	94	4.6	110	5.4
Pink Beans, Cooked	½ cup	126	4.5	149	5.3
Apple, with Skin	1 medium	95	4.4	52	2.4
Green Peas, Cooked (Fresh, Frozen, Canned)	½ cup	59-67	3.5-4.4	69-84	4.1-5.5
Refried Beans, Canned	½ cup	107	4.4	90	3.7
Chia Seeds, Dried	1 Tbsp	58	4.1	486	34.4
Bulgur, Cooked	½ cup	76	4.1	83	4.5
Mixed Vegetables, Cooked from Frozen	½ cup	59	4.0	65	4.4
Raspberries	½ cup	32	4.0	52	6.5
Blackberries	½ cup	31	3.8	43	5.3
Collards, Cooked	½ cup	32	3.8	33	4.0
Soybeans, Green, Cooked	½ cup	127	3.8	141	4.2
Prunes, Stewed	½ cup	133	3.8	107	3.1

Dietary Fiber: Food Sources Ranked by Amounts of Dietary Fiber & Energy per Standard Food Portions & per 100 Grams of Foods

Food	Standard Portion Size	Calories in Standard Portion ^(a)	Dietary Fiber in Standard Portion (g) ^[a]]	Calories per 100 grams ^[a]	Dietary Fiber per 100 grams (g) ^[a]
Sweet Potato, Baked in Skin	1 medium	103	3.8	90	3.3
Figs, Dried	¼ сир	93	3.7	249	9.8
Pumpkin, Canned	½ cup	42	3.6	34	2.9
Potato, Baked, with Skin	1 medium	163	3.6	94	2.1
Popcorn, Air-Popped	3 cups	93	3.5	387	14.5
Almonds	1 ounce	164	3.5	579	12.5
Pears, Dried	¼ cup	118	3.4	262	7.5
Whole Wheat Spaghetti, Cooked	½ сир	87	3.2	124	4.5
Parsnips, Cooked	½ cup	55	3.1	71	4.0
Sunflower Seed Kernels, Dry Roasted	1 ounce	165	3.1	582	11.1
Orange	1 medium	69	3.1	49	2.2
Banana	1 medium	105	3.1	89	2.6
Guava	1 fruit	37	3.0	68	5.4
Oat Bran Muffin	1 small	178	3.0	270	4.6
Pearled Barley, Cooked	½ cup	97	3.0	123	3.8

Food	Standard Portion Size	Calories in Standard Portion ^[a]	Dietary Fiber in Standard Portion (g) ^[a]	Calories per 100 grams ^[a]	Dietary Fiber per 100 grams (g) ^[a]
Winter Squash, Cooked	½ cup	38	2.9	37	2.8
Dates	1⁄4 cup	104	2.9	282	8.0
Pistachios, Dry Roasted	1 ounce	161	2.8	567	9.9
Pecans, Oil Roasted	1 ounce	203	2.7	715	9.5
Hazelnuts or Filberts	1 ounce	178	2.7	628	9.7
Peanuts, Oil Roasted	1 ounce	170	2.7	599	9.4
Whole Wheat Paratha Bread	1 ounce	92	2.7	326	9.6
Quinoa, Cooked	½ cup	111	2.6	120	2.8

[a] Source: U.S Department of Agriculture, Agricultural Research Service, Nutrient Data Laboratory. 2014. USDA National Nutrient Database for Standard Reference, Release 27. Available at: http://www.ars.usda.gov/nutrientdata.

Appendix 14.

Food Safety Principles & Guidance

An important part of healthy eating is keeping foods safe. It is estimated that foodborne illness affects about 1 in 6 Americans (or 48 million people), leading to 128,000 hospitalizations and 3,000 deaths every year.[1] Food may be handled numerous times as it moves from the farm to homes. Individuals in their own homes can reduce contaminants and help keep food safe to eat by following safe food handling practices. Four basic food safety principles work together to reduce the risk of foodborne illness-Clean, Separate, Cook, and Chill. These four principles are the cornerstones of Fight BAC!®, a national food safety education campaign aimed at consumers.

Clean

Microbes, such as bacteria and viruses. can be spread throughout the kitchen and get onto hands, cutting boards, utensils, countertops, reusable grocery bags, and foods. This is called "crosscontamination." Hand washing is important to prevent contamination of food with microbes from raw animal products (e.g., raw seafood, meat, poultry, and eggs) and from people (e.g., cold, flu, and Staph infections). Frequent cleaning of surfaces is essential in preventing crosscontamination. To reduce microbes and contaminants from foods, all produce, regardless of where it was grown or purchased, should be thoroughly rinsed. This is particularly important for produce that will be eaten raw.

Hands

Hands should be washed before and after preparing food, especially after handling raw seafood, meat, poultry, or eggs, and before eating. In addition, hand washing is recommended after going to the bathroom, changing diapers, coughing or sneezing, tending to someone who is sick or injured, touching animals, and handling garbage. Hands should be washed using soap and water. Soaps with antimicrobial agents are not needed for consumer hand washing, and their use over time can lead to growth of microbes resistant to these agents. Alcohol-based (≥ 60%), rinse-free hand sanitizers should be used when hand washing with soap is not possible. Hand sanitizers are not as effective when hands are visibly dirty or greasy.

Wash Hands With Soap & Water

- Wet hands with clean running water (warm or cold), turn off tap, and apply soap.
- Rub hands together to make lather and scrub the back of hands, between fingers, and under nails for at least 20 seconds. If you need a timer you can hum the "happy birthday" song from beginning to end twice.
- Rinse hands well under running water.
- Dry hands using a clean towel or air dry them.

Surfaces

Surfaces should be washed with hot, soapy water. A solution of 1 tablespoon of unscented, liquid chlorine bleach per gallon of water can be used to sanitize surfaces. All kitchen surfaces should be kept clean, including tables, countertops, sinks, utensils, cutting boards, and appliances. For example, the insides of microwaves easily become soiled with food, allowing microbes to grow. They should be cleaned often.

Keep Appliances Clean

- At least once a week, throw out refrigerated foods that should no longer be eaten.
- Cooked leftovers should be discarded after 4 days; raw poultry and ground meats, 1 to 2 days.
- Wipe up spills immediately—clean food-contact surfaces often
- Clean the inside and the outside of appliances. Pay particular attention to buttons and handles where crosscontamination to hands can occur.

Foods

Vegetables & Fruits. All produce, regardless of where it was grown or purchased, should be thoroughly rinsed. However, any precut packaged items, like lettuce or baby carrots, are labeled as prewashed and ready-to-eat. These products can be eaten without further rinsing.

[1] http://www.cdc.gov/foodborneburden/. Accessed June 1, 2015.

- Rinse fresh vegetables and fruits under running water just before eating, cutting, or cooking.
- Do not use soap or detergent to clean produce; commercial produce washes are not needed.
- Even if you plan to peel or cut the produce before eating, it is still important to thoroughly rinse it first to prevent microbes from transferring from the outside to the inside of the produce.
- Scrub the skin or rind of firm produce, such as melons and cucumbers, with a clean produce brush while you rinse it.
- Dry produce with a clean cloth towel or paper towel to further reduce bacteria that may be present.
 Wet produce can allow remaining microbes to multiply faster.

Seafood, Meat, & Poultry. Raw seafood, meat, and poultry should not be rinsed. Bacteria in these raw juices can spread to other foods, utensils, and surfaces, leading to foodborne illness.

Separate

Separating foods that are ready-to-eat from those that are raw or that might otherwise contain harmful microbes is key to preventing foodborne illness. Attention should be given to separating foods at every step of food handling, from purchase to preparation to serving.

Separate Foods When Shopping

 Place raw seafood, meat, and poultry in plastic bags. Separate them from other foods in your grocery cart and bags.

- Store raw seafood, meat, and poultry below ready-to-eat foods in your refrigerator.
- Clean reusable grocery bags regularly.
 Wash canvas and cloth bags in the washing machine and wash plastic reusable bags with hot, soapy water.

Separate Foods When Preparing & Serving Food

- Always use a clean cutting board for fresh produce and a separate one for raw seafood, meat, and poultry.
- Always use a clean plate to serve and eat food
- Never place cooked food back on the same plate or cutting board that previously held raw food.

Cook & Chill

Seafood, meat, poultry, and egg dishes should be cooked to the recommended safe minimum internal temperature to destroy harmful microbes (see Table A14-1). It is not always possible to tell whether a food is safe by how it looks. A food thermometer should be used to ensure that food is safely cooked and that cooked food is held at safe temperatures until eaten. In general, the food thermometer should be placed in the thickest part of the food, not touching bone, fat, or gristle. The manufacturer's instructions should be followed for the amount of time needed to measure the temperature of foods. Food thermometers should be cleaned with hot, soapy water before and after each use.

Temperature rules also apply to microwave cooking. Microwave ovens can cook unevenly and leave "cold spots" where harmful bacteria can survive. When cooking using a microwave, foods

should be stirred, rotated, and/or flipped periodically to help them cook evenly. Microwave cooking instructions on food packages always should be followed.

Keep Foods at Safe Temperatures

- Hold cold foods at 40°F or below.
- Keep hot foods at 140°F or above.
- Foods are no longer safe to eat when they have been in the danger zone of 40-140°F for more than 2 hours (1 hour if the temperature was above 90°F).
 - When shopping, the 2-hour window includes the amount of time food is in the grocery basket, car, and on the kitchen counter.
 - As soon as frozen food begins to thaw and become warmer than 40°F, any bacteria that may have been present before freezing can begin to multiply. Use one of the three safe ways to thaw foods: (1) in the refrigerator, (2) in cold water (i.e., in a leak proof bag, changing cold water every 30 minutes), or (3) in the microwave. Never thaw food on the counter. Keep your refrigerator at 40°F or below.
- Keep your freezer at 0°F or below.
 Monitor these temperatures
 with appliance thermometers.

Recommended Safe Minimum Internal Temperatures

Consumers should cook foods to the minimum internal temperatures shown below. The temperature should be measured with a clean food thermometer before removing meat from the heat source. For safety and quality, allow meat to rest for at least 3 minutes before carving or consuming. For reasons of personal preference, consumers may choose to cook meat to higher temperatures.

Food	Degrees Fahrenheit
Ground Meat & Meat Mixtures	
Beef, Pork, Veal, Lamb	160
Turkey, Chicken	165
Fresh Beef, Pork, Veal, Lamb	
Steaks, Roasts, Chops	145
Poultry	
Chicken & Turkey, Whole	165
Poultry Breasts, Roasts	165
Poultry Thighs, Wings	165
Duck & Goose	165
Stuffing (Cooked Alone or in Bird)	165
Fresh Pork	160
Ham	
Fresh Ham (Raw)	145
Pre-cooked Ham (to Reheat)	140
Eggs & Egg Dishes	
Eggs	Cook until yolk and white are firm.
Egg Dishes	160
Fresh Seafood	
Finfish	145; Cook fish until it is opaque (milky white) and flakes with a fork.
Shellfish	Cook shrimp, lobster, and scallops until they reach their appropriate color. The flesh of shrimp and lobster should be an opaque (milky white) color. Scallops should be opaque (milky white) and firm. Cook clams, mussels, and oysters until their shells open. This means that they are done. Throw away the ones that didn't open. Shucked clams and shucked oysters are fully cooked when they are opaque (milky white) and firm.
Leftovers & Casseroles	165

Risky Eating Behaviors

Harmful bacteria, viruses, and parasites usually do not change the look or smell of food. This makes it impossible for consumers to know whether food is contaminated. Consumption of raw or undercooked animal food products increases the risk of contracting a foodborne illness. Raw or undercooked foods commonly eaten in the United States include eggs (e.g., eggs with runny yolks), ground beef (e.g., undercooked hamburger), dairy (e.g., cheese made from unpasteurized milk), and seafood (e.g., raw oysters). Cooking foods to recommended safe minimum internal temperatures and consuming only pasteurized dairy products are the best ways to reduce the risk of foodborne illness from animal products. Always use pasteurized eggs or egg products when preparing foods that are made with raw eggs (e.g., eggnog, smoothies and other drinks, hollandaise sauce, ice cream. and uncooked cookie dough). Consumers who choose to eat raw seafood despite the risks should choose seafood that has been previously frozen, which will kill parasites but not harmful microbes.

Specific Populations at Increased Risk of Foodborne Illness

Some individuals, including women who are pregnant and their unborn children, young children, older adults, and individuals with weakened immune systems (such as those living with HIV infection, cancer treatment, organ transplant, or liver disease), are more susceptible than the general population to the effects of foodborne illnesses such as listeriosis and salmonellosis. The outcome of contracting a foodborne illness for these individuals can be severe or even fatal. They need to take special care to keep foods safe and to not eat foods that increase the risk of foodborne

illness. Women who are pregnant, infants and young children, older adults, and people with weakened immune systems should only eat foods containing seafood, meat, poultry, or eggs that have been cooked to recommended safe minimum internal temperatures. They also should take special precautions not to consume unpasteurized (raw) juice or milk or foods made from unpasteurized milk, like some soft cheeses (e.g., Feta, queso blanco, queso fresco, Brie, Camembert cheeses, blue-veined cheeses, and Panela). They should reheat deli and luncheon meats and hot dogs to steaming hot to kill Listeria, the bacteria that causes listeriosis, and not eat raw sprouts, which also can carry harmful bacteria.

Resources for Additional Food Safety Information

Federal Food Safety Gateway: www.foodsafety.gov

Fight BAC!®: www.fightbac.org

Be Food Safe: www.befoodsafe.gov

Is It Done Yet?: www.isitdoneyet.gov

ThermyTM: http://www.fsis.usda. gov/wps/portal/fsis/topics/foodsafety-education/teach-others/fsiseducational-campaigns/thermy

For more information and answers to specific questions:

- Call the USDA Meat and Poultry Hotline 1-888-MPHotline (1-888-674-6854) TTY: 1-800-256-7072. Hours: 10:00 a.m. to 4:00 p.m. Eastern time, Monday through Friday, in English and Spanish, or email: mphotline.fsis@usda.gov
- Visit "Ask Karen," FSIS's Webbased automated response system at www.fsis.usda.gov

Notes





