USDA Nutrient Data Set for Fresh Pork (From SR), Release 2.0[1]

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Release Notes:
    Release 1.0 – June 2006
    Release 1.1 – September 2007. Updated data to conform to that in SR20.
    Release 2.0 – October 2009. Added data for ground pork.

Documentation: The USDA Nutrient Data Set
For Fresh Pork (From SR)

Introduction

Nutrient composition data for fresh pork products in the USDA National Nutrient Database for Standard Reference (SR) were updated in 2006. Since that time, changes in animal husbandry practices and industry procedures have led to the availability of leaner cuts. Furthermore, the USDA Food Safety and Inspection Service (FSIS) have proposed labeling regulations for fresh, single-ingredient meats. In order to provide up-to-date nutrient information on fresh pork products in SR, the USDA Nutrient Data Laboratory (NDL), in collaboration with scientists at the University of Wisconsin and the National Pork Board, conducted a study to determine the nutrient composition of nine (9) fresh pork cuts. The cuts chosen for evaluation were bone-in shoulder blade steak, boneless tenderloin roast, boneless top loin chop, boneless top loin roast, bone-in sirloin roast, bone-in center loin chop, bone-in center rib chop, bone-in country-style ribs, and bone-in spare ribs. They were analyzed both in the raw and cooked states by the most commonly used cooking method for each cut. To assist industry in preparing for the proposed new labeling regulations, these data are being presented as a separate release.

Recently, another study was conducted by NDL, in collaboration with Texas Tech University and the National Pork Board to determine the mathematical relationship between the individual nutrients and fat content of raw ground pork using regression techniques. The regression equations derived from this study were used to estimate the nutrient profile of ground pork based on the fat level in the raw product. These nutrient profiles were used to update the USDA National Nutrient Database for Standard Reference (SR).

Methods and Procedures

Sampling

In the 2006 release nine fresh pork cuts were pre-ordered and purchased from 12 retail outlets (4 regions, 3 outlets per region) using the nationwide sampling plan developed for the USDA National Food and Nutrient Analysis Program (NFNAP) (Perry et al., 2003) and shipped frozen to the University of Wisconsin for trimming and preparation. Products from each location were assigned to either raw or cooked preparation. For products containing multiple smaller cuts per package, all products were placed side by side and every other individual piece (cut) was assigned to one preparation method; the remaining cuts were then assigned to the other preparation method. For roasts and spareribs, each roast or rack of ribs was randomly assigned to either raw or cooked preparation.

In the ground pork study, samples were obtained from each of the four US commercial packers of this product (Smithfield, Premium Standard Farms, Farmland, and Johnsonville). These samples were formulated by the packer to provide the following fat levels; low fat (2 – 6%, 4 individual samples per packer except 2 from Smithfield), medium fat (14-17%, 4 individual samples per packer) and high fat (26 - 30%, 4 individual samples per packer). Samples from each packer from each fat level were divided into aliquots for preparations as raw products, pan-broiled patties, and pan-browned crumbles.

Cooking procedures

(Note – all product is cooked as purchased; removal of fat, bone, and connective tissue was performed after cooking)

Broiling

Center Loin Chops, Center Rib Chops, Top Loin Chops –Chops were grilled on a pre-heated George Foreman™ Indoor/Outdoor Electric Barbeque Grill for 10 minutes on setting "4". External fat thickness and chop thickness were measured prior to cooking; weights of raw cuts were obtained. Two (2) thermocouples were placed into one (1) or two (2) chops, as needed. Chops were turned-over when the internal temperature reached 100°-105^oF. Chops were removed from the grill to attain a final internal temperature of 160^oF (chops were taken off the grill at approximately 155^oF internal temperature). Chops were cooled on a wire rack for 5 minutes and the highest internal temperature attained during the standing period was recorded. After standing for 5 minutes, chops were re-weighed.

Pan-broiling

Ground pork patties- Approximately 112 g of ground pork were selected from each packers sample and weighed and blended in 20 rotations manually in a Hobart mixer for 2 minutes. Patties were formed by pressing them in a patty mold. A West Bend Electric skillet was preheated to 204^oC. Ground pork patties were grilled for 13-15 minutes, turning once, and removed from the pan when the internal patty temperature reached $74^o C$. Patties were allowed to cool for 5 minutes. Weights were determined prior to cooking and after cooling; cooking yields were calculated from these weights. When cooled the patties were cut in half to evaluate degree of doneness.

Roasting

Top Loin and Sirloin Roasts – Oven was pre-heated to 325^oF (monitored with oven thermometer). Top loin roasts (boneless) were roasted as "single" loin roasts (one loin muscle only). If the purchased product was "double top loin roast (boneless)" (i.e. two single top loin roasts backed and tied together), the strings were removed, and each half of the double top loin roast was processed as a single top loin roast. Roasts were weighed raw, and placed on a rack in a pan in order to keep it out of the drippings). The roast was not covered during cooking. An oven-durable meat thermometer was placed into the geometric center of the roast. Roasts were removed when they achieved an internal temperature of ~150^oF; the target final internal temperature was approximately 160^oF. Roasts were allowed to stand 15 minutes (the final internal temperature was determined during this period). The cooked weight of the roast was determined and the cooking yield was calculated.

Tenderloin Roast – Oven was pre-heated to 425^oF; temperature was monitored with an oven thermometer. No external fat measurements were taken on tenderloin roasts, but raw roast weight was determined. The roast was placed on a rack in a pan to keep the roast out of the drippings. An oven-durable meat thermometer was placed into the thickest part of the tenderloin. The roast was removed when a final internal temperature of 150^oF was achieved. This was done in anticipation of continued temperature rise immediately after cooking, and also in consideration of other areas of this roast cut which were not as thick as the larger end in which the thermometer was placed. After removal from the oven, the roast was allowed to stand for 15 minutes. The final internal temperature was measured and the cooked weight of the roast was obtained in order to calculate cooking yield.

Spareribs – The oven was pre-heated to 325^oF. No external fat measurements were collected, but any gross physical fat (loosely attached) from the raw ribs were removed before cooking. The raw weight of the spareribs was obtained. The number of ribs in the product being cooked was recorded. Spareribs were placed on a rack in a pan, but were not covered during cooking. Ribs were roasted for 1 hour and 45 minutes (105 minutes). Ribs were then removed from the oven; the temperature in the intercostal muscles was immediately taken. Ribs were cooled for 10 minutes,

and then re-weighed. When cool enough to process, edible lean was separated from bone/cartilage. Trimmable fat and connective tissue are not an issue in cooked ribs, since it is assumed that, with this product, all soft tissues are consumed.

Braising
Shoulder blade Steaks and Country Style Ribs - Oven was pre-heated to 325°F; temperature was monitored with an oven thermometer. The thickness of the external fat around the outer surface of the cuts was measured. The raw blade steaks and/or country-style ribs were weighed. Blade steaks or ribs were placed on a rack in a roasting pan. Distilled water (100 ml) was added to the roasting pan, which was covered tightly and placed in the center of the oven. Cuts were braised until reasonably tender. Cooking time was determined from initial trials. Initial cooking time estimates were: 45 minutes for blade steaks; 1 hour and 15 minutes for country-style ribs. Immediately after removal from the oven, the product was placed on a wire rack. The internal temperature was determined with an electronic digital thermometer. Steaks and/or ribs were allowed to cool for 5 minutes; cooked weights were determined and cooking yields calculated. When cool enough to handle, cuts were separated into their component parts, e.g. lean tissue, separable fat.

Pan-browning:
Ground pork crumbles- Approximately 224g of ground pork were weighed and blended in 20 rotations manually in a Hobart mixer for 2 minutes. Patties were formed by hand on a patty mold. West Bend Electric skillet was preheated to 204°C; Three to four patties were placed on the skillet and pan-browned for 5 minutes. Patties were broken apart with a silicon turner while browning to form crumbles and removed from the pan when the internal temperature reached 74°C. Crumbles were drained in a colander to remove excess fat. Crumbles were allowed to cool at room temperature for 5 minutes; pre- and post- cooking weights were determined and cooking yields calculated. When cooled crumbles were placed into labeled clean unsealed vacuum bags and stored in the cooler at 3°C.

Dissection - raw and cooked fresh pork cuts

Measurement of external trimmable (separable) fat - For all chops, blade steaks, and country-style ribs, external fat at the ¼, ½, and ¾ points along the external fat surface of the product were measured in millimeters. Thickness was measured in the center of the cut made at these points to expose the external fat thickness. For top loin and sirloin roasts, fat thickness measurements were taken over the center of the exposed fat at the ¼, ½, and ¾ points along the length of the roast. External fat measurements were not determined on tenderloin roast or spareribs.

Separation of lean meat, separable fat, connective tissue, and bone - The technical perspective was that of a "careful consumer", who conscientiously separates these tissues. The most difficult separation is between the trimmable (separable) fat and connective tissue, which lies in the "seams" between muscles. The separation was accomplished by "scraping" the co-mingled tissues with a knife blade, such that the soft fat was separated from the tougher, stringy connective tissue. Separable lean tissue should be relatively free of trimmable fat, while the trimmable fat should be reasonably free of connective tissue.

Separable lean meat, separable fat, and connective tissue were removed from bones as cleanly as possible. Separable fat (i.e., external fat trim and seam fat), bone, and connective tissue were removed from raw and cooked products and weighed to determine the relative amounts of separable fat and separable lean meat. Component weights (i.e. weights of separable lean,

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separable fat, bone, and connective tissue) will be reported in the USDA National Nutrient Database for Standard Reference; weights of connective tissue and bone will be combined and reported as "refuse". For food items listed "lean only", the separable fat associated with that cut is considered "refuse"; for food items listed "lean and fat", the separable fat is considered edible and contributes to the nutrient values.

Compositing – fresh pork cuts

Shoulder blade steak, tenderloin roast, and top loin chops represent different areas of the pig and are most commonly cooked by grilling, roasting, and braising, respectively. For purposes of this study, these are referred to as the primary cuts since complete nutrient profiles were obtained for the raw and cooked preparations of these cuts. The lean tissue from each of these cuts purchased from an individual location was combined into individual composites for homogenization and nutrient analysis; for some nutrients (proximates, minerals, cholesterol, thiamin, niacin, and riboflavin), the number of observations (n) = 12. For pantothenic acid, vitamin B_6, and vitamin B_{12}, samples from the three locations in a region were combined to form regional composites and n = 4. A single regional composite was analyzed for retinol (Vitamin A); n = 1. Complete nutrient profiles for composite samples of raw and cooked separable fat derived from all the products were analyzed separately.

Proximate nutrients and minerals were analyzed from individual composites for both the raw and cooked preparations of top loin roasts, sirloin roasts, center loin chops, center rib chops, country-style ribs, and spare ribs. For these cuts, cholesterol, thiamin, niacin, and riboflavin were determined from the regional composites of the cooked samples. For some nutrients, values were imputed using established NDL procedures. Nutrient values for pantothenic acid, vitamin B_6 and vitamin B_{12} for these cooked cuts were imputed from the primary cuts prepared (cooked) in the same manner. Nutrient values (cholesterol, thiamin, niacin, and riboflavin, pantothenic acid, vitamin B_6 and vitamin B_{12}) for the raw preparations were imputed from their cooked counterparts. A commercial laboratory, whose analytical procedures were evaluated through the NFNAP process and found to be acceptable, performed tissue homogenization and nutrient analyses.

Compositing – fresh ground pork

Ground pork samples, raw and cooked, were homogenized separately into individual or composite samples for nutrient analysis and divided into 4 levels according to the nutrient analysis plan:

- Level 1: Individual samples were prepared for the determination of proximate nutrients and cholesterol (4 samples x 4 packers at the medium and high fat levels for each preparation; 4 samples x 3 packers + 2 samples x 1 packer at the lowest fat level for each preparation; total n =138).
- Level 2: Composites of two individual samples were prepared for analysis of minerals and fatty acids (2 samples x 4 packers at the medium and high fat levels for each preparation; 2 samples x 3 packers + 1 sample x 1 packer at the lowest fat level for each preparation; total n =69).
- Level 3: Composites of four individual samples were prepared for analysis of Thiamin, riboflavin, niacin and amino acid profile (1 samples x 4 packers at the medium and high fat levels for each preparation; 1 samples x 3 packers at the lowest fat level for each preparation; total n =33).

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- Level 4: Composites for all samples from all packers per fat level were prepared for analysis of pantothenic acid, vitamin B_6, vitamin B_{12}, choline, folate and vitamin E (1 sample x all packers combined x 3 fat levels for each preparation /cooking method; total n=9).

Nutrient analyses

Samples were analyzed for proximate nutrients (moisture, nitrogen/protein, total fat, and ash), fatty acids, vitamin A, and B vitamins (niacin, thiamin, riboflavin, pantothenic acid, and vitamins B_6 and B_{12}) using standard AOAC procedures. Minerals were determined by inductively coupled plasma (ICP), while selenium was measured by hydride generation. More detailed information on the specific methods of analysis is given in Appendix A. Quality assurance was monitored through the use of commercial reference materials, in-house control materials, and random blind duplicate sampling.

Data processing

Fresh pork cuts

Nutrient data for items reported as "lean and fat" were calculated by multiplying the relative amounts of separable lean meat and separable fat by their respective nutrient content, and summing the products. "Lean and fat" data for raw and cooked forms of the pork cuts, as well as the "lean only" form of the cooked products, are shown in the tables. The Appendix provides the analytical nutrient values for the "lean only" form of the raw products (Appendix B), and the raw and cooked forms of separable fat (Appendices C and D, respectively), which were used to calculate the "lean and fat" pork items.

Values for total saturated fatty acids and total trans fatty acids were obtained by summing the analytical values for the individual fatty acids in their respective classes. Values for carbohydrate, fiber, sugars, and vitamin C were assumed to be zero. Energy in kilocalories was calculated using Atwater factors (4.27 for protein; 9.02 for fat). The value for 'calories from fat' represents the contribution of total fat to energy, using the factor of 9.02.

Ground pork; formulation of regression equations

The nutrient data generated by chemical analyses were analyzed using Mixed Model Regression Analyses (SAS, 2004) in order to obtain regression equations for each nutrient and each preparation method (raw and cooked). The regression equations defined the mathematical relationship between the various nutrients and the total fat content of raw ground pork, and were used to estimate the nutrient profiles for ground pork products containing 4%, 16% and 28% fat.

Nutrient profiles for raw ground pork from 4-28% fat, in increments of 1% fat, as determined by regression equations are presented in a separate spreadsheet (.File name = EstNutrRawGrndPork4_28.xls).

Table format

The table heading provides a general descriptive name for the food item, the Urmis number, and the unique Nutrient Databank number identifying the edible content of the food item, its preparation type, and cooking method. For example, nutrient values for pork muscle cuts are listed as "Lean and fat, raw", "Lean and fat, cooked, roasted" and "Lean only, cooked, roasted". Ground

pork names are listed for "Raw", "Pan-browned crumbles" and "Pan-broiled patty". Column 1 identifies the nutrient. The nutrient value unit is presented in column 2. For raw preparations, nutrient values are expressed on a 100 g basis or a 115 g basis (columns 3-4). The 115 g (4 oz) value represents the amount of raw product needed to yield 85 g (3 oz) of cooked product. For cooked preparations (columns 5-6), data are presented on a 100 g or 85 g basis, which equals a serving of cooked meat. Column 7 provides NDL source codes. A source code of 1 indicates analytical data, source code 4 represents imputed or calculated data, and source code 7 is used when the nutrient content is assumed to be zero.

Data Dissemination

The Revised USDA Nutrient Data Set for Fresh Pork is presented as a PDF file. Adobe Acrobat Reader® is needed to view the report of the database. A Microsoft® Excel spreadsheet has also been prepared and is available for downloading from this web site (http://www.ars.usda.gov/nutrientdata). The user can download the data set, free of charge, onto his/her own computer for use with other programs. The tables in the Excel spreadsheet are in the same format and layout as those in the PDF file.

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Acknowledgement

Pork, fresh, loin, top loin (chops), boneless

Urmis No: 3369

NDB No: 10062 Lean and Fat, raw ; 10064 Lean and Fat, cooked, broiled ;
10068 Lean only, cooked, broiled

Common names: Pork top loin chops, Strip loin chops, America's cut chops

Nutrient Name	Unit	n	Lean and Fat				Lean Only[1]		Source Code[2]
			Raw		*Cooked (Broiled)*		*Cooked (Broiled)*		
			100g	115g	100g	85g	100g	85g	
Water	g	12	70.39	80.95	63.07	53.61	65.11	55.34	1
Energy	kcal	0	156	180	195	165	173	147	4
Calories from fat	kcal	0	62	72	81	69	55	47	4
Protein	g	12	21.95	25.25	26.69	22.68	27.58	23.44	1
Total lipid (fat)	g	12	6.92	7.97	9.23	7.84	6.08	5.17	1
Ash	g	12	0.97	1.12	1.00	0.85	1.03	0.88	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	7
Fiber, total dietary	g	0	0	0	0	0	0	0	7
Sugars, total	g	0	0	0	0	0	0	0	7
Calcium, Ca	mg	12	7	8	7	6	5	5	1
Iron, Fe	mg	12	0.50	0.57	0.63	0.54	0.63	0.54	1
Sodium, Na	mg	12	48	56	44	38	45	38	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	7
Vitamin A	IU	1	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	2.45	2.817	3.196	2.716	2.077	1.765	4
Fatty acids, total trans	g	0	0.064	0.073	0.084	0.071	0.052	0.044	4
Cholesterol	mg	12	67	77	73	62	72	61	1
Magnesium, Mg	mg	12	26	30	26	22	27	23	1
Phosphorus, P	mg	12	226	260	231	196	237	201	1
Potassium, K	mg	12	374	430	358	304	367	312	1
Zinc, Zn	mg	12	1.55	1.78	2.09	1.78	2.15	1.83	1
Selenium, Se	mcg	12	33.1	51.3	43.7	37.1	45.3	38.5	1
Thiamin	mg	12	0.667	0.767	0.638	0.542	0.658	0.559	1
Riboflavin	mg	12	0.185	0.212	0.191	0.162	0.195	0.166	1
Niacin	mg	12	7.989	9.187	8.234	6.998	8.513	7.236	1
Pantothenic acid	mg	4	0.727	0.836	0.681	0.579	0.693	0.589	1
Vitamin B_6	mg	4	0.726	0.835	0.698	0.593	0.722	0.614	1
Vitamin B_{12}	mcg	4	0.53	0.61	0.59	0.50	0.56	0.47	1

[1] Cuts were cooked with separable fat present; separable fat was removed prior to nutrient analyses

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC= 7- Assumed Zero

Pork, fresh, loin, top loin (roasts), boneless

Urmis No: 3368

NDB No: 10224 Lean and Fat, raw ; 10065 Lean and Fat, cooked, roasted ;
10069 Lean only, cooked, roasted

Common names: Boneless pork loin, Centercut boneless pork loin roast

Nutrient Name	Unit	n	Lean and Fat				Lean Only[1]		Source Code[2]
			Raw		*Cooked (Roasted)*		*Cooked (Roasted)*		
			100g	115g	100g	85g	100g	85g	
Water	g	12	69.96	80.45	63.53	54	65.6	55.76	1
Energy	kcal	0	168	193	195	166	173	147	4
Calories from fat	kcal	0	77	89	82	70	57	48	4
Protein	g	12	21.28	24.47	26.36	22.40	27.23	23.15	1
Total lipid (fat)	g	12	8.58	9.86	9.13	7.76	6.28	5.34	1
Ash	g	12	0.97	1.11	0.98	0.83	1.01	0.86	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	7
Fiber, total dietary	g	0	0	0	0	0	0	0	7
Sugars, total	g	0	0	0	0	0	0	0	7
Calcium, Ca	mg	12	7	8	7	6	6	5	1
Iron, Fe	mg	12	0.53	0.61	0.64	0.55	0.64	0.55	1
Sodium, Na	mg	12	47	54	46	39	47	40	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	7
Vitamin A	IU	1	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	2.855	3.283	2.950	2.508	1.928	1.638	4
Fatty acids, total trans	g	0	0.084	0.097	0.083	0.071	0.051	0.044	4
Cholesterol	mg	4	64	73	80	68	79	68	1, 4 *
Magnesium, Mg	mg	12	24	28	25	21	26	22	1
Phosphorus, P	mg	12	215	248	222	189	227	193	1
Potassium, K	mg	12	357	410	348	296	357	303	1
Zinc, Zn	mg	12	1.72	1.98	2.10	1.79	2.16	1.84	1
Selenium, Se	mcg	12	26.5	30.5	34.8	29.6	35.9	30.5	1
Thiamin	mg	4	0.425	0.489	0.545	0.463	0.561	0.477	1, 4 *
Riboflavin	mg	4	0.180	0.207	0.231	0.197	0.238	0.202	1, 4 *
Niacin	mg	4	5.555	6.388	7.083	6.021	7.278	6.186	1, 4 *
Pantothenic acid	mg	0	0.707	0.813	0.672	0.571	0.683	0.581	4.000
Vitamin B$_6$	mg	0	0.703	0.808	0.689	0.586	0.713	0.606	4.000
Vitamin B$_{12}$	mcg	0	0.53	0.61	0.58	0.50	0.55	0.47	4

[1] Cuts were cooked with separable fat present; separable fat was removed prior to nutrient analyses

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC= 7- Assumed Zero

* Values for cooked products are analytical; Values for raw products are imputed

Pork, fresh, loin, sirloin (roasts), bone-in

Urmis No: 3328

NDB No: 10052 Lean and Fat, raw ; 10055 Lean and Fat, cooked, roasted ;
10059 Lean only, cooked, roasted

Common names: Loin end roast, Sirloin end roast, Hipbone roast

Nutrient Name	Unit	n	Lean and Fat				Lean Only[1]		Source Code[2]
			Raw		*Cooked (Roasted)*		*Cooked (Roasted)*		
			100g	115g	100g	85g	100g	85g	
Water	g	12	70.29	80.83	59.26	50.38	61.74	52.48	1
Energy	kcal	0	175	201	231	196	204	173	4
Calories from fat	kcal	0	81	94	117	99	85	72	4
Protein	g	12	20.46	23.53	26.6	22.61	27.78	23.61	1
Total lipid (fat)	g	12	9.03	10.39	12.98	11.03	9.44	8.02	1
Ash	g	12	0.95	1.09	1.07	0.91	1.12	0.95	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	7
Fiber, total dietary	g	0	0	0	0	0	0	0	7
Sugars, total	g	0	0	0	0	0	0	0	7
Calcium, Ca	mg	12	14	16	15	13	13	11	1
Iron, Fe	mg	12	0.82	0.94	0.94	0.8	0.96	0.82	1
Sodium, Na	mg	12	56	65	57	49	59	50	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	7
Vitamin A	IU	1	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	2.978	3.424	4.113	3.496	2.872	2.441	4
Fatty acids, total trans	g	0	0.084	0.096	0.104	0.088	0.063	0.054	4
Cholesterol	mg	4	70	81	89	75	89	76	1, 4 *
Magnesium, Mg	mg	12	23	27	25	21	26	22	1
Phosphorus, P	mg	12	208	240	228	193	235	200	1
Potassium, K	mg	12	335	386	340	289	352	299	1
Zinc, Zn	mg	12	1.95	2.24	2.52	2.14	2.62	2.23	1
Selenium, Se	mcg	12	29.2	33.6	44.4	37.7	46.4	39.4	1
Thiamin	mg	4	0.492	0.565	0.638	0.542	0.665	0.565	1, 4 *
Riboflavin	mg	4	0.276	0.318	0.36	0.306	0.376	0.32	1, 4 *
Niacin	mg	4	6.089	7.002	7.855	6.677	8.165	6.94	1, 4 *
Pantothenic acid	mg	0	0.837	0.963	1.035	0.88	1.074	0.913	4
Vitamin B$_6$	mg	0	0.754	0.867	0.748	0.636	0.784	0.666	4
Vitamin B$_{12}$	mcg	0	0.56	0.64	0.64	0.55	0.61	0.51	4

[1] Cuts were cooked with separable fat present; separable fat was removed prior to nutrient analyses

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC= 7- Assumed Zero

* Values for cooked products are analytical; Values for raw products are imputed

Pork, fresh, loin, tenderloin, boneless

Urmis No: 3358

NDB No: 10218 Lean and Fat, raw ; 10222 Lean and Fat, cooked, roasted ;
10061 Lean only, cooked, roasted

Common names: Pork tenderloin

Nutrient Name	Unit	n	Lean and Fat				Lean Only[1]		Source Code[2]
			Raw		*Cooked (Roasted)*		*Cooked (Roasted)*		
			100g	115g	100g	85g	100g	85g	
Water	g	12	74.97	86.22	69.11	58.74	69.45	59.04	1
Energy	kcal	0	128	147	145	123	141	120	4
Calories from fat	kcal	0	32	37	34	29	30	26	4
Protein	g	12	20.65	23.74	26.04	22.13	26.16	22.24	1
Total lipid (fat)	g	12	3.53	4.06	3.96	3.37	3.51	2.98	1
Ash	g	12	1.01	1.16	1.20	1.02	1.21	1.03	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	7
Fiber, total dietary	g	0	0	0	0	0	0	0	7
Sugars, total	g	0	0	0	0	0	0	0	7
Calcium, Ca	mg	12	6	6	6	5	6	5	1
Iron, Fe	mg	12	0.97	1.12	1.15	0.98	1.15	0.98	1
Sodium, Na	mg	12	46	53	49	42	49	42	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	7
Vitamin A	IU	1	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	1.182	1.359	1.359	1.155	1.198	1.018	4
Fatty acids, total trans	g	0	0.036	0.042	0.038	0.032	0.033	0.028	4
Cholesterol	mg	12	65	75	73	62	73	62	1
Magnesium, Mg	mg	12	27	31	29	25	29	25	1
Phosphorus, P	mg	12	243	280	235	200	267	226	1
Potassium, K	mg	12	402	463	419	356	421	358	1
Zinc, Zn	mg	12	1.87	2.15	2.41	2.05	2.42	2.06	1
Selenium, Se	mcg	12	30.3	34.8	38.0	32.3	38.2	32.5	1
Thiamin	mg	12	0.982	1.129	0.944	0.803	0.950	0.807	1
Riboflavin	mg	12	0.337	0.387	0.385	0.327	0.387	0.329	1
Niacin	mg	12	6.610	7.601	7.402	6.291	7.433	6.318	1
Pantothenic acid	mg	4	0.837	0.963	1.008	0.857	1.013	0.861	1
Vitamin B_6	mg	4	0.765	0.880	0.735	0.625	0.739	0.628	1
Vitamin B_{12}	mcg	4	0.52	0.60	0.58	0.49	0.57	0.49	1

[1] Cuts were cooked with separable fat present; separable fat was removed prior to nutrient analyses

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC= 7- Assumed Zero

Pork, fresh, loin, center rib (chops), bone-in

Urmis No: 3298

NDB No: 10044 Lean and Fat, raw ; 10046 Lean and Fat, cooked, broiled ;
10050 Lean only, cooked, broiled

Common names: Centercut pork loin, Rib chops, Rib cut chops

Nutrient Name	Unit	N	Lean and Fat				Lean Only[1]		Source Code[2]
			Raw		*Cooked (Broiled)*		*Cooked (Broiled)*		
			100g	115g	100g	85g	100g	85g	
Water	g	12	67.94	78.13	61.67	52.42	65.14	55.37	1
Energy	kcal	0	185	213	222	189	186	158	4
Calories from fat	kcal	0	98	113	118	100	75	64	4
Protein	g	12	20.32	23.37	24.42	20.76	25.79	21.92	1
Total lipid (fat)	g	12	10.89	12.52	13.03	11.07	8.36	7.10	1
Ash	g	12	0.95	1.09	0.97	0.83	1.02	0.87	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	7
Fiber, total dietary	g	0	0	0	0	0	0	0	7
Sugars, total	g	0	0	0	0	0	0	0	7
Calcium, Ca	mg	12	25	29	28	24	26	22	1
Iron, Fe	mg	12	0.59	0.68	0.68	0.58	0.68	0.58	1
Sodium, Na	mg	12	56	65	55	46	57	48	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	7
Vitamin A	IU	1	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	3.824	4.397	4.486	3.813	2.816	2.393	4
Fatty acids, total trans	g	0	0.108	0.124	0.121	0.102	0.068	0.058	4
Cholesterol	mg	4	59	67	67	57	66	56	1, 4 *
Magnesium, Mg	mg	12	23	27	24	20	25	21	1
Phosphorus, P	mg	12	204	234	209	178	218	185	1
Potassium, K	mg	12	338	388	329	279	343	292	1
Zinc, Zn	mg	12	1.85	2.13	2.15	1.82	2.25	1.91	1
Selenium, Se	mcg	12	35.5	40.8	42.8	36.4	45.4	38.6	1
Thiamin	mg	4	0.456	0.525	0.541	0.460	0.569	0.483	1, 4 *
Riboflavin	mg	4	0.177	0.203	0.210	0.179	0.219	0.186	1, 4 *
Niacin	mg	4	6.340	7.291	7.479	6.357	7.855	6.677	1, 4 *
Pantothenic acid	mg	0	0.682	0.784	0.631	0.537	0.647	0.550	4
Vitamin B_6	mg	0	0.671	0.771	0.637	0.542	0.675	0.574	4
Vitamin B_{12}	mcg	0	0.53	0.61	0.58	0.49	0.52	0.44	4

[1] Cuts were cooked with separable fat present; separable fat was removed prior to nutrient analyses

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC= 7- Assumed Zero

* Values for cooked products are analytical; Values for raw products are imputed

Pork, fresh, loin, center loin (chops), bone-in

Urmis No: 3313

NDB No: 10036 Lean and Fat, raw ; 10038 Lean and Fat, cooked, broiled ;
10042 Lean only, cooked, broiled

Common names: Centercut pork loin chops, Centercut pork chops, Center loin chops

Nutrient Name	Unit	n	Lean and Fat				Lean Only[1]		Source Code[2]
			Raw		*Cooked (Broiled)*		*Cooked (Broiled)*		
			100g	115g	100g	85g	100g	85g	
Water	g	12	69.67	80.12	62.28	52.94	65.01	55.26	1
Energy	kcal	0	170	196	209	178	180	153	4
Calories from fat	kcal	0	82	94	100	85	66	56	4
Protein	g	12	20.70	23.81	25.62	21.78	26.76	22.75	1
Total lipid (fat)	g	12	9.06	10.42	11.04	9.38	7.29	6.20	1
Ash	g	12	0.96	1.11	1.01	0.86	1.05	0.89	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	7
Fiber, total dietary	g	0	0	0	0	0	0	0	7
Sugars, total	g	0	0	0	0	0	0	0	7
Calcium, Ca	mg	12	19	22	24	20	23	19	1
Iron, Fe	mg	12	0.63	0.72	0.79	0.67	0.80	0.68	1
Sodium, Na	mg	12	55	63	54	46	56	48	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	7
Vitamin A	IU	1	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	3.005	3.455	3.509	2.983	2.156	1.833	4
Fatty acids, total trans	g	0	0.093	0.107	0.106	0.090	0.065	0.055	4
Cholesterol	mg	4	68	79	84	71	84	72	1, 4 *
Magnesium, Mg	mg	12	25	29	25	22	26	22	1
Phosphorus, P	mg	12	209	240	220	187	228	193	1
Potassium, K	mg	12	343	394	344	293	356	303	1
Zinc, Zn	mg	12	1.77	2.03	2.14	1.82	2.22	1.89	1
Selenium, Se	mcg	12	35.9	41.3	43.6	37.1	45.7	38.8	1
Thiamin	mg	4	0.484	0.557	0.599	0.509	0.624	0.530	1, 4 *
Riboflavin	mg	4	0.189	0.217	0.234	0.199	0.243	0.206	1, 4 *
Niacin	mg	4	6.613	7.605	8.149	6.926	8.485	7.212	1, 4 *
Pantothenic acid	mg	0	0.691	0.795	0.657	0.559	0.671	0.570	4
Vitamin B_6	mg	0	0.684	0.786	0.669	0.568	0.700	0.595	4
Vitamin B_{12}	mcg	0	0.53	0.60	0.58	0.50	0.54	0.46	4

[1] Cuts were cooked with separable fat present; separable fat was removed prior to nutrient analyses

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC= 7- Assumed Zero

* Values for cooked products are analytical; Values for raw products are imputed

Pork, fresh, spareribs, bone-in
Urmis No: 3468
NDB No: 10088 Lean and Fat, raw ; 10940 Lean and Fat, cooked, roasted ;
10940 Lean only, cooked, roasted

Nutrient Name	Unit	n	Lean and Fat				Lean Only[1]		Source Code[2]
			Raw		Cooked (Roasted)		Cooked (Roasted)		
			100g	115g	100g	85g	100g	85g	
Water	g	12	58.43	67.19	48.11	40.89	48.11	40.89	1
Energy	kcal	0	275	316	358	304	358	304	4
Calories from fat	kcal	0	211	243	278	237	278	237	4
Protein	g	12	15.67	18.02	20.89	17.76	20.89	17.76	1
Total lipid (fat)	g	12	23.4	26.91	30.86	26.23	30.86	26.23	1
Ash	g	12	0.69	0.79	0.82	0.69	0.82	0.69	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	7
Fiber, total dietary	g	0	0	0	0	0	0	0	7
Sugars, total	g	0	0	0	0	0	0	0	7
Calcium, Ca	mg	12	15	17	19	16	19	16	1
Iron, Fe	mg	12	0.91	1.05	1.43	1.22	1.43	1.22	1
Sodium, Na	mg	12	81	94	91	77	91	77	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	7
Vitamin A	IU	1	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	7.007	8.058	9.242	7.856	9.242	7.856	4
Fatty acids, total trans	g	0	0.179	0.206	0.236	0.201	0.236	0.201	4
Cholesterol	mg	4	80	92	105	89	105	89	1, 4 *
Magnesium, Mg	mg	12	16	19	18	15	18	15	1
Phosphorus, P	mg	12	141	162	162	138	162	138	1
Potassium, K	mg	12	242	278	265	225	265	225	1
Zinc, Zn	mg	12	2.50	2.88	3.26	2.77	3.26	2.77	1
Selenium, Se	mcg	12	22.0	25.3	30.6	26.0	30.6	26.0	1
Thiamin	mg	4	0.318	0.366	0.418	0.355	0.418	0.355	1, 4 *
Riboflavin	mg	4	0.251	0.289	0.328	0.279	0.328	0.279	1, 4 *
Niacin	mg	4	4.661	5.36	6.103	5.187	6.103	5.187	1, 4 *
Pantothenic acid	mg	0	0.506	0.582	0.807	0.686	0.807	0.686	4
Vitamin B_6	mg	0	0.464	0.534	0.589	0.501	0.589	0.501	4
Vitamin B_{12}	mcg	0	0.31	0.35	0.45	0.39	0.45	0.39	4

[1] Cuts were cooked with separable fat present; separable fat was removed prior to nutrient analyses
[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC= 7- Assumed Zero
* Values for cooked products are analytical; Values for raw products are imputed

Pork, fresh, loin, country-style ribs, bone-in
Urmis No: 3275

NDB No: 10204 Lean and Fat, raw ; 10205 Lean and Fat, cooked, braised ;
10208 Lean only, cooked, braised
Common names: Country ribs

Nutrient Name	Unit	n	Lean and Fat				Lean Only[1]		Source Code[2]
			Raw		*Cooked (Braised)*		*Cooked (Braised)*		
			100g	115g	100g	85g	100g	85g	
Water	g	12	68.25	78.49	53.94	45.84	56.16	47.74	1
Energy	kcal	0	189	217	288	245	247	210	4
Calories from fat	kcal	0	106	122	167	142	129	109	4
Protein	g	12	19.35	22.25	28.31	22.51	27.74	23.58	1
Total lipid (fat)	g	12	11.78	13.55	18.5	15.73	14.26	12.12	1
Ash	g	12	0.95	1.09	0.95	0.81	0.92	0.78	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	7
Fiber, total dietary	g	0	0	0	0	0	0	0	7
Sugars, total	g	0	0	0	0	0	0	0	7
Calcium, Ca	mg	12	22	26	36	30	33	28	1
Iron, Fe	mg	12	0.85	0.98	1.43	1.21	1.39	1.18	1
Sodium, Na	mg	12	63	72	58	49	59	50	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	7
Vitamin A	IU	1	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	4.184	4.811	6.302	5.356	5.086	4.323	4
Fatty acids, total trans	g	0	0.114	0.131	0.153	0.130	0.113	0.096	4
Cholesterol	mg	4	75	86	103	87	105	89	1, 4 *
Magnesium, Mg	mg	12	21	24	24	20	23	19	1
Phosphorus, P	mg	12	193	222	202	171	208	176	1
Potassium, K	mg	12	318	366	288	244	297	252	1
Zinc, Zn	mg	12	2.78	3.20	4.87	4.14	4.81	4.09	1
Selenium, Se	mcg	12	32.3	37.1	46.3	39.3	48.6	41.3	1
Thiamin	mg	4	0.253	0.375	0.461	3.918	0.480	0.405	1, 4 *
Riboflavin	mg	4	0.196	0.226	0.283	2.405	0.300	0.251	1, 4 *
Niacin	mg	4	3.082	3.544	5.548	4.715	5.72	4.858	1, 4 *
Pantothenic acid	mg	0	1.610	1.851	1.363	1.158	1.328	1.129	4
Vitamin B$_6$	mg	0	0.539	0.62	0.472	0.401	0.49	0.416	4
Vitamin B$_{12}$	mcg	0	1.00	1.15	0.93	0.79	0.94	0.79	4

[1] Cuts were cooked with separable fat present; separable fat was removed prior to nutrient analyses
[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC= 7- Assumed Zero
* Values for cooked products are analytical; Values for raw products are imputed

Pork, fresh, shoulder, blade (steaks), bone-in

Urmis No: 3186

NDB No: 10080 Lean and Fat, raw ; 10081 Lean and Fat, cooked, braised ;
10085 Lean only, cooked, braised

Common names: Shoulder blade steak, Pork steak, Pork shoulder chop

Nutrient Name	Unit	n	Lean and Fat				Lean Only[1]		Source Code[2]
			Raw		*Cooked (Braised)*		*Cooked (Braised)*		
			100g	115g	100g	85g	100g	85g	
Water	g	12	69.23	79.62	54.97	46.73	58.00	49.30	1
Energy	kcal	0	185	213	269	229	235	200	4
Calories from fat	kcal	0	111	128	159	135	119	101	4
Protein	g	12	17.43	20.04	25.07	21.07	26.57	22.58	1
Total lipid (fat)	g	12	12.30	14.14	17.66	15.01	13.2	11.22	1
Ash	g	12	0.83	0.95	0.82	0.69	0.85	0.73	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	7
Fiber, total dietary	g	0	0	0	0	0	0	0	7
Sugars, total	g	0	0	0	0	0	0	0	7
Calcium, Ca	mg	12	16	19	26	22	25	21	1
Iron, Fe	mg	12	1.12	1.28	1.75	1.48	1.85	1.57	1
Sodium, Na	mg	12	61	70	58	49	60	51	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	7
Vitamin A	IU	1	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	4.326	4.975	6.573	5.587	5.023	4.270	4
Fatty acids, total trans	g	0	0.114	0.131	0.154	0.131	0.102	0.087	4
Cholesterol	mg	12	63	73	99	84	100	85	1
Magnesium, Mg	mg	12	20	23	23	20	24	20	1
Phosphorus, P	mg	12	190	219	208	177	217	184	1
Potassium, K	mg	12	318	365	305	259	318	270	1
Zinc, Zn	mg	12	3.09	3.56	4.85	4.12	5.20	4.42	1
Selenium, Se	mcg	12	26.3	30.2	42.4	36.0	45.0	38.3	1
Thiamin	mg	12	0.521	0.599	0.501	0.426	0.526	0.447	1
Riboflavin	mg	12	0.354	0.407	0.365	0.310	0.388	0.330	1
Niacin	mg	12	4.241	4.877	3.873	3.292	3.935	3.345	1
Pantothenic acid	mg	4	1.448	1.665	1.290	1.097	1.368	1.162	1
Vitamin B_6	mg	4	0.486	0.559	0.448	0.381	0.470	0.400	1
Vitamin B_{12}	mcg	4	0.91	1.05	0.93	0.79	0.90	0.72	1

[1] Cuts were cooked with separable fat present; separable fat was removed prior to nutrient analyses

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC= 7- Assumed Zero

Pork, ground, 96% lean / 4% fat

Urmis No: 3658
NDB No: 10973 raw ; 10976 Crumbles pan-browned ; 10979 Patty pan-broiled
Common names:

Nutrient Name	Unit	n	Ground Pork – 96% lean, 4% fat						Source Code[2]
			Raw		*Crumbles Pan-browned*		*Patty Pan-broiled*		
			100g	115g	100g	85g	100g	85g	
Water	g	14	73.62	84.66	61.03	51.88	60.08	51.07	1
Energy	kcal	0	120	138	187	159	183	155	4
Calories from fat	kcal	0	36	41	64	55	56	47	4
Protein	g	14	21.1	24.26	30.55	25.97	31.69	26.94	1
Total lipid (fat)	g	14	4.00	4.6	7.15	6.08	6.2	5.27	1
Ash	g	14	1.07	1.23	1.49	1.27	1.47	1.25	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	7
Fiber, total dietary	g	0	0	0	0	0	0	0	7
Sugars, total	g	0	0	0	0	0	0	0	7
Calcium, Ca	mg	7	15	18	19	17	20	17	1
Iron, Fe	mg	7	0.86	0.99	1.05	0.89	1.11	0.94	1
Sodium, Na	mg	7	67	77	84	72	88	75	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	7
Vitamin A	IU	0	0	0	0	0	0	0	7
Vitamin D	mcg	1	4.2	4.8	7.3	6.2	6.3	5.4	1, 4 [2]
Fatty acids, total saturated	g	8	1.314	1.511	1.951	1.658	2.076	1.764	1
Fatty acids, total trans	g	8	0.02	0.023	0.03	0.025	0.03	0.025	1
Cholesterol	mg	14	59	68	78	66	85	73	1
Magnesium, Mg	mg	7	19	22	27	23	25	21	1
Phosphorus, P	mg	7	190	218	261	222	261	222	1
Potassium, K	mg	7	310	356	428	364	415	353	1
Zinc, Zn	mg	7	1.93	2.22	2.56	2.17	2.59	2.21	1
Selenium, Se	mcg	7	34.8	40	46.7	39.7	49.1	41.8	1
Thiamin	mg	3	0.414	0.480	0.500	0.420	0.433	0.370	1
Riboflavin	mg	3	0.368	0.423	0.484	0.411	0.435	0.370	1
Niacin	mg	3	7.914	9.101	11.050	9.392	10.293	8.749	1
Pantothenic acid	mg	1	0.646	0.743	0.846	0.719	0.846	0.719	1
Vitamin B_6	mg	1	0.668	0.768	0.717	0.610	0.627	0.533	1
Vitamin B_{12}	mcg	1	0.64	0.73	0.86	0.73	0.83	0.70	1

[1] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC= 7- Assumed Zero
[2] For Vitamin D, SC =1 (raw and crumbles, pan-browned); SC =4 for patty, broiled.

Pork, ground, 84% lean / 16% fat
Urmis No: 3657
NDB No: 10972 raw ; 10975 Pan-browned Crumbles ; 10978 Patty pan-broiled
Common names:

Nutrient Name	Unit	n	Ground Pork – 84% lean, 16% fat						Source Code[2]
			Raw		Crumbles Pan-browned		Patty Pan-broiled		
			100g	115g	100g	85g	100g	85g	
Water	g	16	64.67	74.37	51.35	43.65	51.97	44.17	1
Energy	kcal	0	216	248	287	244	301	256	4
Calories from fat	kcal	0	144	166	180	153	193	164	4
Protein	g	16	17.99	20.68	26.69	22.69	27.14	23.07	1
Total lipid (fat)	g	16	16.00	18.4	20.04	17.03	21.39	18.18	1
Ash	g	16	0.91	1.05	1.34	1.14	1.26	1.07	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	7
Fiber, total dietary	g	0	0	0	0	0	0	0	7
Sugars, total	g	0	0	0	0	0	0	0	7
Calcium, Ca	mg	8	15	18	20	17	20	17	1
Iron, Fe	mg	8	0.88	1.01	1.1	0.93	1.16	0.99	1
Sodium, Na	mg	8	68	78	89	76	89	76	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	7
Vitamin A	IU	0	0	0	0	0	0	0	7
Vitamin D	mcg	1	16.8	19.3	20.4	17.3	21.8	18.5	1, 4 [2]
Fatty acids, total saturated	g	8	5.362	6.166	6.631	5.636	7.453	6.335	1
Fatty acids, total trans	g	8	0.111	0.128	0.143	0.121	0.192	0.163	1
Cholesterol	mg	16	68	78	89	76	97	83	1
Magnesium, Mg	mg	8	16	18	23	20	22	18	1
Phosphorus, P	mg	8	161	185	226	192	221	188	1
Potassium, K	mg	8	244	281	354	301	345	293	1
Zinc, Zn	mg	8	1.91	2.19	2.57	2.18	2.54	2.16	1
Selenium, Se	mcg	8	30.2	34.7	42.4	36.0	43.5	37	1
Thiamin	mg	4	0.332	0.380	0.421	0.360	0.352	0.300	1
Riboflavin	mg	4	0.338	0.389	0.486	0.413	0.462	0.392	1
Niacin	mg	4	6.416	7.379	9.286	7.893	8.573	7.287	1
Pantothenic acid	mg	1	0.639	0.734	0.915	0.778	0.830	0.706	1
Vitamin B_6	mg	1	0.551	0.634	0.613	0.521	0.535	0.455	1
Vitamin B_{12}	mcg	1	0.73	0.84	1.02	0.86	0.97	0.82	1

[1] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC= 7- Assumed Zero
[2] For Vitamin D, SC =1 (raw and crumbles, pan-browned); SC =4 for patty, broiled.

Pork, ground, 72% lean / 28% fat
Urmis No: 3656
NDB No: 10971 raw ; 10974 Pan-browned Crumbles ; 10977 Patty pan-broiled
Common names:

Nutrient Name	Unit	n	Ground Pork – 72% lean, 28% fat						Source Code[2]
			Raw		Crumbles Pan-browned		Patty Pan-broiled		
			100g	115g	100g	85g	100g	85g	
Water	g	16	55.71	64.07	41.67	35.42	43.85	37.28	1
Energy	kcal	0	311	358	388	330	373	317	4
Calories from fat	kcal	0	252	290	296	252	283	240	4
Protein	g	16	14.87	17.11	22.83	19.41	22.59	19.2	1
Total lipid (fat)	g	16	28.00	32.2	32.93	27.99	31.42	26.71	1
Ash	g	16	0.75	0.86	1.18	1	1.05	0.89	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	7
Fiber, total dietary	g	0	0	0	0	0	0	0	7
Sugars, total	g	0	0	0	0	0	0	0	7
Calcium, Ca	mg	8	16	18	20	17	20	17	1
Iron, Fe	mg	8	0.9	1.04	1.15	0.98	1.21	1.03	1
Sodium, Na	mg	8	69	79	94	80	91	77	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	7
Vitamin A	IU	0	0	0	0	0	0	0	7
Vitamin D	mcg	1	29.4	33.8	33.5	28.5	32.0	27.2	1, 4 [2]
Fatty acids, total saturated	g	8	9.409	10.821	11.311	9.614	10.804	9.184	1
Fatty acids, total trans	g	8	0.203	0.233	0.256	0.217	0.229	0.195	1
Cholesterol	mg	16	76	88	100	85	99	84	1
Magnesium, Mg	mg	8	13	15	19	16	18	16	1
Phosphorus, P	mg	8	132	152	192	163	181	154	1
Potassium, K	mg	8	178	205	280	238	275	234	1
Zinc, Zn	mg	8	1.89	2.17	2.58	2.19	2.48	2.11	1
Selenium, Se	mcg	8	25.6	29.4	38	32.3	37.9	32.2	1
Thiamin	mg	4	0.250	0.290	0.341	0.290	0.271	0.230	1
Riboflavin	mg	4	0.309	0.355	0.488	0.415	0.488	0.415	1
Niacin	mg	4	4.919	5.657	7.522	6.394	6.852	5.824	1
Pantothenic acid	mg	1	0.631	0.726	0.984	0.836	0.815	0.693	1
Vitamin B_6	mg	1	0.435	0.500	0.508	0.432	0.443	0.377	1
Vitamin B_{12}	mcg	1	0.82	0.94	1.17	1.00	1.11	0.94	1

[1] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC= 7- Assumed Zero
[2] For Vitamin D, SC =1 (raw and crumbles, pan-browned); SC =4 for patty, broiled.

Appendix A – Analytical methods

NUTRIENT	TECHNIQUE	METHOD
Nitrogen	Combustion	AOAC 968.06 Protein (Crude) in Animal Feed[1]
Fat	Extraction	Folch, J, et al. (1957)[2]
	Acid hydrolysis	AOAC 954.02 Fat (Crude) or Ether Extract in Pet Food
Ash	Gravimetric	AOAC 923.03 Ash of Flour
Moisture	Forced air	AOAC 950.46 Moisture in Meat
Minerals	Inductively coupled plasma (ICP)	AOAC 985.01 + 984.27
Selenium	Hybride generation	AOAC 986.15 Arsenic, Cadmium, Lead, Selenium and Zinc in Human and Pet Foods
Retinol	High performance liquid chromatography (HPLC)	AOAC 974.29 + Thompson and Duval (1989)[3]
Thiamin	Fluorometric	AOAC 942.23 + 953.17 + 957.17
Riboflavin	Microbiological	AOAC 940.33 + 960.46 + US Pharmacopeia[4], 23rd rev., pp. 1749-1750
Niacin	Microbiological	AOAC 944.13 + 960.46 + 985.34 + US Pharmacopeia, 23rd rev., pp. 1743-1745
Pantothenic Acid	Microbiological	AOAC 945.74 + 960.46 + US Pharmacopeia, 23rd rev., pp.257-258
Vitamin B6	Microbiological	AOAC 961.15 + Atkin, et al., (1943)[5]
Vitamin B12	Microbiological	AOAC 952.20 + 960.46 + US Pharmacopeia, 23rd rev., pp. 435
Fatty acids	Gas chromatography (GC)	AOAC 996.06 Fat (Total, Saturated and Monosaturated) in foods
Cholesterol	GC/Direct saponification	AOAC 994.10 Cholesterol in Foods

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[1] Official Methods of Analysis of AOAC International (2000) 17th Ed., AOAC International, Gaithersburg, MD, USA.

[2] Folch J, Less M, Stanley GHS. (1957) A simple method for the isolation and purification of total lipides from animal tissues. J. Bio. Chem. 226:497-509.

[3] Thompson J and Duval S. (1989) Vitamin A in foods. J. Micronutrient Anal. 6:147-159.

[4] US Pharmacopeia (1995) 23rd rev., United States Pharmacopeial Convention, Inc. Rockville, MD.

[5] Atkin L, Schultz AS, Williams WL, and Frey CN. (1943) Yeast microbiological methods for determination of vitamins – pyridoxine. Indust. Eng. Chem., Analytical Ed. 15(2):141-144

Appendix B. Nutrient content of separable lean meat, raw

Description	Nutrient	Unit	100g	N	Source Code
Pork, fresh, shoulder,	Water	g	74.31	12	1
blade (steaks), separable	Protein	g	18.73	12	1
lean only, raw	Total lipid (fat)	g	5.71	12	1
Common names -	Ash	g	0.88	12	1
shoulder blade steak	Calcium, Ca	mg	14	12	1
pork steak	Iron, Fe	mg	1.20	12	1
pork shoulder chop	Sodium, Na	mg	65	12	1
	Vitamin A	IU	0	1	1
	Fatty acids, total saturated	g	1.998	12	4 *
	Fatty acids, total trans	g	0.039	12	4 *
	Cholesterol	mg	61	12	1
	Magnesium, Mg	mg	22	12	1
	Phosphorus, P	mg	202	12	1
	Potassium, K	mg	339	12	1
	Zinc, Zn	mg	3.36	12	1
	Selenium, Se	µg	28.2	12	1
	Thiamin	mg	0.558	12	1
	Riboflavin	mg	0.384	12	1
	Niacin	mg	4.387	12	1
	Pantothenic acid	mg	1.568	4	1
	Vitamin B_6	mg	0.521	4	1
	Vitamin B_{12}	µg	0.91	4	1

* Calculated as the sum of the analytical values for the fatty acids in their respective classes.

Description	Nutrient	Unit	100g	N	Source Code
Pork, fresh, loin, country-	Water	g	72.84	12	1
style ribs, separable lean	Protein	g	20.75	12	1
only, raw	Total lipid (fat)	g	5.64	12	1
Common names -	Ash	g	1.01	12	1
Country ribs	Calcium, Ca	mg	21	12	1
	Iron, Fe	mg	0.90	12	1
	Sodium, Na	mg	67	12	1
	Vitamin A	IU	0	1	1
	Magnesium, Mg	mg	23	12	1
	Phosphorus, P	mg	204	12	1
	Potassium, K	mg	338	12	1
	Zinc, Zn	mg	3.00	12	1
	Selenium, Se	µg	34.7	12	1

Appendix B. Nutrient content of separable lean meat, raw

Description	Nutrient	Unit	100g	N	Source Code
Pork, fresh, loin, center rib (chops), bone-in, separable lean only, raw Common names - Centercut pork loin Rib chops Rib cut chops	Water	g	72.40	12	1
	Protein	g	21.79	12	1
	Total lipid (fat)	g	4.80	12	1
	Ash	g	1.01	12	1
	Calcium, Ca	mg	24	12	1
	Iron, Fe	mg	0.61	12	1
	Sodium, Na	mg	60	12	1
	Vitamin A	IU	0	1	1
	Magnesium, Mg	mg	25	12	1
	Phosphorus, P	mg	216	12	1
	Potassium, K	mg	359	12	1
	Zinc, Zn	mg	1.97	12	1
	Selenium, Se	µg	38.3	12	1
Pork, fresh, loin, center loin (chops), separable lean only, raw Common names - Centercut pork loin chops, Centercut pork chops Center loin chops	Water	g	73.62	12	1
	Protein	g	21.99	12	1
	Total lipid (fat)	g	3.71	12	1
	Ash	g	1.01	12	1
	Calcium, Ca	mg	18	12	1
	Iron, Fe	mg	0.65	12	1
	Sodium, Na	mg	58	12	1
	Vitamin A	IU	0	1	1
	Magnesium, Mg	mg	26	12	1
	Phosphorus, P	mg	220	12	1
	Potassium, K	mg	362	12	1
	Zinc, Zn	mg	1.86	12	1
	Selenium, Se	µg	36.0	12	1
Pork, fresh, loin, sirloin (roasts), bone-in, separable lean only, raw Common names - Loin end roast Sirloin end roast Hipbone roast	Water	g	73.97	12	1
	Protein	g	21.65	12	1
	Total lipid (fat)	g	4.02	12	1
	Ash	g	1.00	12	1
	Calcium, Ca	mg	12	12	1
	Iron, Fe	mg	0.85	12	1
	Sodium, Na	mg	59	12	1
	Vitamin A	IU	0	1	1
	Magnesium, Mg	mg	25	12	1
	Phosphorus, P	mg	219	12	1
	Potassium, K	mg	353	12	1
	Zinc, Zn	mg	2.05	12	1
	Selenium, Se	µg	30.9	12	1

Appendix B. Nutrient content of separable lean meat, raw

Description	Nutrient	Unit	100g	N	Source Code
Pork, fresh, loin, tenderloin, separable lean only, raw	Water	g	76.00	12	1
	Protein	g	20.95	12	1
	Total lipid (fat)	g	2.17	12	1
Common names -	Ash	g	1.03	12	1
Pork tenderloin	Calcium, Ca	mg	5	12	1
	Iron, Fe	mg	0.98	12	1
	Sodium, Na	mg	47	12	1
	Vitamin A	IU	0	1	1
	Fatty acids, total saturated	g	0.699	12	4 *
	Fatty acids, total trans	g	0.021	12	4 *
	Cholesterol	mg	65	12	1
	Magnesium, Mg	mg	27	12	1
	Phosphorus, P	mg	247	12	1
	Potassium, K	mg	408	12	1
	Zinc, Zn	mg	1.89	12	1
	Selenium, Se	µg	30.7	12	1
	Thiamin	mg	0.998	12	1
	Riboflavin	mg	0.342	12	1
	Niacin	mg	6.684	12	1
	Pantothenic acid	mg	0.847	4	1
	Vitamin B_6	mg	0.777	4	1
	Vitamin B_{12}	µg	0.51	4	1

* Calculated as the sum of the analytical values for the fatty acids in their respective classes.

Description	Nutrient	Unit	100g	N	Source Code
Pork, fresh, loin, top loin (roasts), boneless, separable lean only, raw	Water	g	73.28	12	1
	Protein	g	22.40	12	1
	Total lipid (fat)	g	4.06	12	1
Common names-	Ash	g	1.01	12	1
Boneless pork loin	Calcium, Ca	mg	5	12	1
Centercut boneless pork	Iron, Fe	mg	0.54	12	1
loin roast	Sodium, Na	mg	49	12	1
	Vitamin A	IU	0	1	1
	Magnesium, Mg	mg	26	12	1
	Phosphorus, P	mg	225	12	1
	Potassium, K	mg	374	12	1
	Zinc, Zn	mg	1.80	12	1
	Selenium, Se	µg	27.7	12	1

Appendix B. Nutrient content of separable lean meat, raw

Description	Nutrient	Unit	100g	N	Source Code
Pork, fresh, loin, top loin	Water	g	72.93	12	1
(chops), boneless,	Protein	g	22.83	12	1
separable lean only, raw	Total lipid (fat)	g	3.42	12	1
Common names-	Ash	g	1.01	12	1
Pork top loin chops	Calcium, Ca	mg	5	12	1
Strip loin chops	Iron, Fe	mg	0.51	12	1
America's cut chops	Sodium, Na	mg	49	12	1
	Vitamin A	IU	0	1	1
	Fatty acids, total saturated	g	1.212	12	4 *
	Fatty acids, total trans	g	0.025	12	4 *
	Cholesterol	mg	66	12	1
	Magnesium, Mg	mg	27	12	1
	Phosphorus, P	mg	234	12	1
	Potassium, K	mg	387	12	1
	Zinc, Zn	mg	1.59	12	1
	Selenium, Se	µg	34.4	12	1
	Thiamin	mg	0.693	12	1
	Riboflavin	mg	0.190	12	1
	Niacin	mg	8.265	12	1
	Pantothenic acid	mg	0.746	4	1
	Vitamin B_6	mg	0.756	4	1
	Vitamin B_{12}	µg	0.51	4	1

* Calculated as the sum of the analytical values for the fatty acids in their respective classes.

Description	Nutrient	Unit	100g	N	Source Code
Pork, fresh, spareribs,	Water	g	58.43	12	1
separable lean only, raw	Protein	g	15.67	12	1
	Total lipid (fat)	g	23.40	12	1
	Ash	g	0.69	12	1
	Calcium, Ca	mg	15	12	1
	Iron, Fe	mg	0.91	12	1
	Sodium, Na	mg	81	12	1
	Vitamin A	IU	0	1	1
	Magnesium, Mg	mg	16	12	1
	Phosphorus, P	mg	141	12	1
	Potassium, K	mg	242	12	1
	Zinc, Zn	mg	2.50	12	1
	Selenium, Se	µg	22.0	12	1

Appendix C. Nutrient content of separable fat, raw

Description	Nutrient	Unit	100g	N	Source Code
Separable fat, raw	Water	g	23.97	4	1
	Protein	g	5.82	4	1
	Total lipid (fat)	g	70.99	4	1
	Ash	g	0.35	4	1
	Calcium, Ca	mg	36	4	1
	Iron, Fe	mg	0.39	4	1
	Sodium, Na	mg	23	4	1
	Vitamin A	IU	0.0	1	1
	Fatty acids, total saturated	g	25.082	4	4 *
	Fatty acids, total trans	g	0.786	4	4 *
	Cholesterol	mg	85	4	1
	Magnesium, Mg	mg	7	4	1
	Phosphorus, P	mg	84	4	1
	Potassium, K	mg	125	4	1
	Zinc, Zn	mg	0.67	4	1
	Selenium, Se	µg	9	4	1
	Thiamin	mg	0.189	4	1
	Riboflavin	mg	0.083	4	1
	Niacin	mg	2.938	4	1
	Pantothenic acid	mg	0.384	4	1
	Vitamin B_6	mg	0.173	4	1
	Vitamin B_{12}	µg	0.92	4	1

* Calculated as the sum of the analytical values for the fatty acids in their respective classes.

Appendix D. Nutrient content of separable fat, cooked

Description	Nutrient	Unit	100g	N	Source Code
Separable fat, cooked	Water	g	22.08	4	1
	Protein	g	8.86	4	1
	Total lipid (fat)	g	66.20	4	1
	Ash	g	0.42	4	1
	Calcium, Ca	mg	42	4	1
	Iron, Fe	mg	0.64	4	1
	Sodium, Na	mg	29	4	1
	Vitamin A	IU	0.0	1	1
	Fatty acids, total saturated	g	23.430	4	4 *
	Fatty acids, total trans	g	0.719	4	4 *
	Cholesterol	mg	83	4	1
	Magnesium, Mg	mg	10	4	1
	Phosphorus, P	mg	114	4	1
	Potassium, K	mg	167	4	1
	Zinc, Zn	mg	0.96	4	1
	Selenium, Se	µg	13.4	4	1
	Thiamin	mg	0.231	4	1
	Riboflavin	mg	0.111	4	1
	Niacin	mg	3.198	4	1
	Pantothenic acid	mg	0.452	4	1
	Vitamin B_6	mg	0.206	4	1
	Vitamin B_{12}	µg	1.24	4	1

* Calculated as the sum of the analytical values for the fatty acids in their respective classes.