

USDA Nutrient Data Set for Retail Lamb Cuts, for the USDA food composition database¹

Prepared by

**Janet M. Roseland, Quynhanh V. Nguyen, Kristine Y.
Patterson (Ret.)**

**Nutrient Data Laboratory
Agricultural Research Service
U.S. Department of Agriculture
Beltsville, MD**

**in collaboration with
Dale R. Woerner and Cody L. Gifford**
Colorado State University, Department of Animal Sciences, Fort Collins, CO

**January 2017
Revised text July 2017**

U.S. Department of Agriculture
Agricultural Research Service
Beltsville Human Nutrition Research Center
Nutrient Data Laboratory
10300 Baltimore Avenue
Building 005, Room 107, BARC – West
Beltsville, Maryland 20705
Phone 301-504-0630
E-mail: ndlinfo@ars.usda.gov
Web site: <http://www.ars.usda.gov/nutrientdata>

¹Supported by the United States Department of Agriculture, and the National Institutes of Health.

Table of Contents

Purpose & Introduction.....	1
Retail Lamb Cuts Study.....	1-3
Table Format.....	3
References.....	4
Acknowledgements.....	4
USDA Nutrient Data Set for Retail Lamb Cuts, grass- and grain-fed.....	5-20
Lamb leg (whole, sirloin half, or shank half).....	5-6
Lamb shoulder arm chop.....	7-8
Lamb shoulder blade chop.....	9-10
Lamb rib rack roast.....	11-14
Lamb loin chop.....	15-16
Lamb foreshank.....	17-18
Lamb ground.....	19-20
Appendix A: Analytical methods.....	21
Appendix B: Proximates content of separable lean meat, raw.....	22-25

Mention of trade names or entities in this publication is solely for the purpose of providing specific information and does not imply recommendation or endorsement by the U.S. Department of Agriculture over others not mentioned.

Purpose

The USDA Nutrient Data Set for Retail Lamb Cuts provides retailers with a tool to obtain the most accurate lamb nutrient data for the purpose of nutrition labeling. This data set focuses on the lamb cuts identified by the USDA Food Safety and Inspection Service (FSIS) for nutrition labeling.

Introduction

Current nutrient composition data for lamb products in the USDA food composition database are used by researchers and consumers who need access to these data for scientific and health purposes. Nutrient updates are important and necessary, in order to reflect the composition of currently available cuts. The USDA Nutrient Data Laboratory (NDL) has recently collaborated with Colorado State University in a lamb research study designed to update or expand data for specific lamb retail cuts. In addition to providing current and accurate estimates for the database, these new data are also useful for enabling the industry to meet the USDA Food Safety and Inspection Service (FSIS) labeling regulations for fresh, single-ingredient meats implemented in 2011.

NDL research studies ensure that the most accurate lamb nutrient data available are included in the USDA food composition database and will enable all other nutrient databases that link to the database to use the most up-to-date nutrient data in nutrition research and surveillances. The objective of the research is to develop, update and maintain the food composition values for retail lamb cuts in the USDA food composition database and to assure that estimates of nutrient data are current and accurate. The objective of the dataset in this report, which is a subset of data in the database, is to provide accurate nutrient data enabling vendors to comply with FSIS labeling for single ingredient meats for preparation of on-pack nutrient labels for various lamb cuts (USDA-FSIS, 2012).

Retail Lamb Cuts Study

A study was conducted with Colorado State University (CSU) to obtain nutrient and composition data for representative retail lamb cuts. The objective of this study was to determine the physical characteristics and nutrient composition of cuts that are among the most popular lamb cuts in the current retail market. This study generated analytical data for some cuts that had not previously been available in the database.

Domestic retail samples for all lamb cuts were collected during all four seasons of the year from U.S. suppliers representing the vast majority of lamb in the retail market. Samples were from lamb raised under both grain-finished and grass-finished U.S. production systems. Grain-finished lamb cuts were obtained from three representative regional sources: 2 from the Intermountain West region and 1 from the West Coast region. Grass-finished lamb cuts were obtained from the two representative regional sources that have seasonal supply of grass-finished cuts available: 1 from the Intermountain West and 1 from the West Coast.

Cooking of Retail Cuts

Retail lamb cuts were tempered in a single layer at 0 to 4° C for 24 to 72 hours depending on cut thickness until internal temperature was at 0 to 4° C. After thawing, each individual cut was blotted to remove any surface moisture, weighed to the nearest 0.1 g, raw temperature was recorded, and any cuts not meeting correct muscle specifications or external fat thickness of 1/8

inch (3.175 mm) were adjusted prior to cooking or raw dissection.

Grilling

For cuts assigned to grilling, a Salton two-sided grill (Model GRP99, Salton Inc., Lake Forest, IL) was pre-heated to a grill surface temperature of 195° C. All pieces within a package were cooked on the same grill at the same time with temperature monitoring using digital thermocouple thermometers and probes. Each individual chop was flipped once at an internal temperature of 20° C was reached to ensure even cooking. All individual chops were removed from the grill surface once an internal temperature of 60° C was reached. Final internal temperature and cooked weight were recorded. An additional internal temperature and cooked weight was measured 30 minutes post cooking.

Roasting

Cuts assigned to roasting were placed in a rack inside of a non-stick anodized aluminum roasting pan (Calphalon Corp., Toledo, OH). A convection oven was preheated to 160° C. Thermocouple probes were placed into the geometric center of each cut throughout the cooking process in order to monitor temperature. Once an internal temperature of 60° C was obtained, final internal temperature and cooked weight were recorded. An additional internal temperature and cooked weight was measured and recorded 30 minutes post cooking.

Pan Grilling

Ground lamb was pan-grilled in a non-stick anodized aluminum skillet pan (Calphalon Corp., Toledo, OH) once a pan surface temperature of 195° C was established by an infrared thermometer. Ground lamb precooked weight was recorded. Temperature was recorded using a digital thermocouple thermometer prior to being placed into a preheated pan. A stainless steel spatula was used to break apart ground lamb loaves to ensure even cooking. An infrared thermometer monitored the temperature until it reached 74° C, and the ground lamb was removed from the heat source, placed into a stainless steel colander for 10 minutes before a post-cook weight was recorded. Ground lamb was placed back into a colander and an additional temperature and weight were recorded 30 minutes post cooking. Ground lamb was placed on a large tray and refrigerated at 0 to 4° C for at least 12 hours before homogenization.

Sample dissection and laboratory analysis

Immediately after cooking and weighing, all cuts were placed on wire racks and allowed to chill uncovered, at refrigeration temperatures (0 to 4°C) for at least 12 hours before cooked dissection.

Raw and cooked samples (n=24 per grain-fed cut and n=10 per grass-fed cut) were dissected using standard protocols. Weights of component factors for each cut, such as separable lean, separable fat, and bone and connective tissue, were determined. “Separable lean” includes muscle, intramuscular fat, and connective tissue that are considered edible. “Separable fat” includes any fat on the outside of the cut and seam fat (intermuscular fat deposits within the cut).

The separable lean, external trim fat, and seam fat were homogenized, composited, and analyzed at CSU for proximates (protein, moisture, fat, ash), fatty acids, and cholesterol. Inductively coupled plasma (ICP) minerals, selenium, the B-vitamins (thiamin, riboflavin, niacin, pantothenic acid, B₆, B₁₂), vitamins D₃ and 25(OH)D were analyzed at a validated commercial laboratory. Choline and

vitamin E metabolites were analyzed at specialized commercial laboratories. Details of analytical methods used in this study are presented in Appendix A.

Nutrient data quality control protocols used:

- Quality control samples were included with each batch of 10 to 20 samples;
- Laboratories were expected to run their own in-house control materials and to report those results;
- Quality control samples included materials developed by NDL cooperating laboratories and characterized with concurrent analysis of certified reference materials, as well as certified reference materials themselves. Blind duplicates were randomly included along with the unknown samples; and
- Only laboratories that NDL validated as having the ability to accurately analyze samples for nutrient content were used.

Data dissemination

Nutrient values to be released in the database include cuts in raw and cooked forms for “separable lean only” and “separable lean and fat”, except for ground lamb and lamb cubed (for stew or kebabs). Since no separable fat is present for these two cuts, nutrient values for ground lamb are provided for raw and cooked but not as “separable lean only” and “separable lean and fat”, and nutrient values for lamb cubed are provided as “separable lean only”.

Table Format

The table heading provides a general descriptive name for the food item and the unique Nutrient Databank number identifying the edible content of the cut, its preparation type, and cooking method: e.g., “lean and fat, raw”, “lean and fat, cooked, grilled” and “lean only, cooked, grilled”. Column 1 identifies the nutrient. The nutrient value unit is presented in column 2. Column 3 identifies the number of observations for each nutrient (N). An N of zero represents an estimated or calculated value. For raw preparations, nutrient values are expressed on a 100 g basis and 114 g basis (columns 4-5). The 113 g (4 oz) value represents the amount of raw product needed to yield 85 g (3 oz) of cooked product. For cooked preparations, data are presented on a 100 g and 85 g basis, which equals a serving of cooked meat. NDL source codes are provided in the final column. A source code of 1 indicates analytical data, source codes 4 and 6 represent imputed or calculated data, and source code 7 is used when the nutrient content is assumed to be zero. Appendix B provides analytical values for the proximates content (protein, water, fat, and ash) of the raw, separable lean per cut.

The cuts in this dataset are as follows, for both grass-fed and grain-fed cuts:

- Lamb leg whole
- Lamb shoulder arm chop
- Lamb shoulder blade chop
- Lamb rib rack roast
- Lamb loin chop
- Lamb foreshank
- Lamb ground

Nutrient Data Set files

The USDA Nutrient Data Set for Lamb is presented as a PDF file. Adobe Acrobat Reader® is needed to view the report. A Microsoft® Excel spreadsheet has also been prepared and is available for downloading from <https://www.ars.usda.gov/northeast-area/beltsville-md/beltsville-human-nutrition-research-center/nutrient-data-laboratory>

The user can download the data set, free of charge, for use with other programs. The tables in the Excel spreadsheet are in the same format and layout as those in the PDF file.

References

AOAC, (2006). *Official methods of analysis* (18th edition). Association of Official Analytical Chemists, Arlington, VA.

Code of Federal Regulations, 317.344 Identification of major cuts of meat products. Accessed 9/29/16 <https://www.law.cornell.edu/cfr/text/9/317.344>

Dinh, T.N., Blanton Jr., J.R., Brooks, J.C., Miller, M.F., and Thompson, L.D. (2008). A simplified method for cholesterol determination in meat and meat products. *Journal of Food Composition and Analysis*, 21, 206-413.

Huang, M., LaLuzerne, P., Winters, D., & Sullivan, D. (2009). Measurement of vitamin D in foods and nutritional supplements by liquid chromatography/tandem mass spectrometry. *Journal of AOAC International*, 92(5), 1327-1335.

Koc, H., Mar, M.H., & Ranasignhe, A. (2002). Quantitation of choline and its metabolites in tissues and foods by liquid chromatography/electrospray ionization-isotope dilution mass spectrometry. *Journal of Analytical Chemistry*, 74, 4734-4740.

Njeru, C.A., McDowell, L.R., Shireman, R.M., Wilkinson, N.S., Rojas, L.X., Williams, S.N. (1995). Assessment of vitamin E nutritional status in yearling beef heifers. *J Anim Sc*, 73:1440-1448

Phillips, K.M., Ruggio, D.M., Howe, J.C., Leheska, J.M., Smith, S.B., Engle, T., Rasor, A.S., Conley, N.A. (2010). Preparation and characterization of control materials for the analysis of conjugated linoleic acid and *trans*-vaccenic acid in beef. *Food Res Int* 43: 2253-2261.

U.S. Government Printing Office. Code of Federal Regulations. Nutrition Labeling. Identification of major cuts of meat products. 9 CFR 317 (Accessed 9/29/2016) http://www.ecfr.gov/cgi-bin/text-idx?SID=a2bdc0d97b3189d8f4c2c02c919c42e7&mc=true&node=se9.2.317_1344&rgn=div8

Acknowledgements

The authors thank the meat scientists and staff who conducted the study at the Department of Animal Sciences, Colorado State University, Fort Collins, CO; Allie Hosmer for assembling the data tables; Dr. Pamela R. Pehrsson for support in the conduct of the work at NDL; and David Haytowitz who assisted in the release of this dataset.

Lamb, grass-fed, leg, whole (shank and sirloin), boneless

Urmis No: 2973

NDB No: Separable lean and fat, raw, 17538; Separable lean and fat, cooked, 17515; Separable lean only, 17479

Nutrient Name	Unit	N ^[1]	Lean and Fat				Lean Only		Source Code ^[2]
			Raw		Cooked (Roasted)		Cooked (Roasted)		
			100g	113g	100g	85g	100g	85g	
Water	g	0/0/1	67	76	59	50	65	55	1
Energy	Kcal	0	204	231	230	196	168	143	4
Calories from fat	Kcal	0	127	144	131	111	58	49	4
Protein	g	0/0/1	19	21	24	20	27	23	1
Total lipid (fat)	g	0/0/1	14	16	15	13	6	5	1
Ash	g	0/0/1	0.92	1.04	1.36	1.16	1.49	1.27	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	4
Fiber, total dietary	g	0	0	0	0	0	0	0	4/4/7
Sugars, total	g	0	0	0	0	0	0	0	4/4/7
Calcium, Ca	mg	0/0/1	8.0	9.0	7.0	5.6	6.0	5.1	1
Iron, Fe	mg	0/0/1	1.7	1.9	2.2	1.9	2.4	2.0	1
Sodium, Na	mg	0/0/1	50	57	55	47	58	49	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	4/4/7
Vitamin A	IU	0	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	6.3	7.1	7.3	6.2	2.8	2.4	4
Fatty acids, total trans	g	0	0.95	1.07	1.09	0.93	0.51	0.43	4
Cholesterol	mg	0/0/1	73	82	89	76	89	76	1
Magnesium, Mg	mg	0/0/1	20	23	24	20	26	22	1
Phosphorus, P	mg	0/0/1	173	195	207	176	226	192	1
Potassium, K	mg	0/0/1	292	330	304	258	329	280	1
Zinc, Zn	mg	0/0/1	3.1	3.5	4.5	3.8	5.0	4.3	1
Selenium, Se	µg	0/0/1	11	12	15	13	17	14	1
Thiamin	mg	0/0/1	0.15	0.17	0.15	0.13	0.16	0.14	1
Riboflavin	mg	0/0/1	0.44	0.50	0.53	0.45	0.59	0.50	1
Niacin	mg	0/0/1	6.3	7.1	6.9	5.9	7.6	6.5	1
Pantothenic acid	mg	0/0/1	0.48	0.54	0.78	0.66	0.85	0.72	1
Vitamin B6	mg	0/0/1	0.35	0.40	0.51	0.43	0.58	0.49	1
Vitamin B12	µg	0/0/1	2.6	2.9	2.3	1.9	2.4	2.0	1
Vitamin D	µg	0/0/1	0.07	0.08	0.07	0.06	0.07	0.06	1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.

[2] Source codes: SC = 1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Lamb, grain-fed, leg, whole (shank and sirloin), boneless

Urmis No: 2973

NDB No: Separable lean and fat, raw, 17526; Separable lean and fat, cooked, 17527; Separable lean only, cooked, 17495

Nutrient Name	Unit	N ^[1]	Lean and Fat				Lean Only		Source Code ^[2]
			Raw		Cooked (Roasted)		Cooked (Roasted)		
			100g	113g	100g	85g	100g	85g	
Water	g	0/0/1	65	73	57	48	64	54	1
Energy	Kcal	0	210	237	262	223	178	151	4
Calories from fat	Kcal	0	135	153	165	140	69	59	4
Protein	g	0/0/1	18	20	23	20	27	23	1
Total lipid (fat)	g	0/0/1	15	17	18	15	8	7	1
Ash	g	0/0/1	0.82	0.93	0.77	0.65	0.89	0.76	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	4
Fiber, total dietary	g	0	0	0	0	0	0	0	4/4/7
Sugars, total	g	0	0	0	0	0	0	0	4/4/7
Calcium, Ca	mg	0/0/1	8.0	9.04	8	6.8	6	5.1	1
Iron, Fe	mg	0/0/1	1.6	1.8	2.0	1.7	2.1	1.8	1
Sodium, Na	mg	0/0/1	50	57	51	43	55	47	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	4/4/7
Vitamin A	IU	0	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	6.6	7.5	8.1	6.9	3.4	2.9	4
Fatty acids, total trans	g	0	1.03	1.16	1.22	1.04	0.51	0.44	4
Cholesterol	mg	0/0/1	76	86	82	70	82	70	1
Magnesium, Mg	mg	0/0/1	21	24	22	19	25	21	1
Phosphorus, P	mg	0/0/1	179	202	196	167	222	189	1
Potassium, K	mg	0/0/1	285	322	293	249	330	281	1
Zinc, Zn	mg	0/0/1	3.2	3.6	4.1	3.5	4.8	4.1	1
Selenium, Se	µg	0/0/1	12	14	17	14	19	16	1
Thiamin	mg	0/0/1	0.13	0.14	0.13	0.11	0.15	0.13	1
Riboflavin	mg	0/0/1	0.35	0.40	0.49	0.42	0.57	0.48	1
Niacin	mg	0/0/1	6.5	7.3	7.7	6.5	8.8	7.5	1
Pantothenic acid	mg	0/0/1	0.50	0.57	0.80	0.68	0.91	0.77	1
Vitamin B ₆	mg	0/0/1	0.34	0.38	0.32	0.27	0.37	0.31	1
Vitamin B ₁₂	µg	0/0/1	2.3	2.6	3.4	2.9	3.8	3.2	1
Vitamin D	µg	0	0.07	0.08	0.07	0.06	0.07	0.06	1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Lamb, grass-fed, shoulder, arm chop, bone-in

Urmis No: 2918

NDB No: Separable lean and fat, raw, 17521

Nutrient Name	Unit	N ^[1]	Lean and Fat				Lean Only		Source Code ^[2]
			Raw		Cooked (Roasted)		Cooked (Roasted)		
			100g	113g	100g	85g	100g	85g	
Water	g	0	69	78					1
Energy	Kcal	0	181	205					4
Calories from fat	Kcal	0	105	119					4
Protein	g	0	19	21					1
Total lipid (fat)	g	0	12	14					1
Ash	g	0	0.89	1.01					1
Carbohydrate, by difference	g	0	0	0					4
Fiber, total dietary	g	0	0	0					4
Sugars, total	g	0	0	0					4
Calcium, Ca	mg	0	10.0	11.3					1
Iron, Fe	mg	0	1.7	1.9					1
Sodium, Na	mg	0	60	68					1
Vitamin C, total ascorbic acid	mg	0	0	0					4
Vitamin A	IU	0	0	0					1
Fatty acids, total saturated	g	0	5.2	5.9					4
Fatty acids, total trans	g	0	0.82	0.93					4
Cholesterol	mg	0	75	85					1
Magnesium, Mg	mg	0	21	24					1
Phosphorus, P	mg	0	181	205					1
Potassium, K	mg	0	304	344					1
Zinc, Zn	mg	0	3.6	4.1					1
Selenium, Se	µg	0	8	9					1
Thiamin	mg	0	0.10	0.11					1
Riboflavin	mg	0	0.34	0.38					1
Niacin	mg	0	6.2	7.0					1
Pantothenic acid	mg	0	0.47	0.53					1
Vitamin B ₆	mg	0	0.28	0.32					1
Vitamin B ₁₂	µg	0	3.0	3.4					1
Vitamin D	µg	0	0.07	0.08					1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Lamb, grain-fed, shoulder, arm chop, bone-in

Urmis No: 2918

NDB No: Separable lean and fat, raw, 17533

Nutrient Name	Unit	N ^[1]	Lean and Fat				Lean Only		Source Code ^[2]
			Raw		Cooked (Roasted)		Cooked (Roasted)		
			100g	113g	100g	85g	100g	85g	
Water	g	0	68	77					1
Energy	Kcal	0	184	208					4
Calories from fat	Kcal	0	109	123					4
Protein	g	0	18	20					1
Total lipid (fat)	g	0	12	14					1
Ash	g	0	0.94	1.06					1
Carbohydrate, by difference	g	0	0	0					4
Fiber, total dietary	g	0	0	0					4
Sugars, total	g	0	0	0					4
Calcium, Ca	mg	0	11.0	12.4					1
Iron, Fe	mg	0	1.7	1.9					1
Sodium, Na	mg	0	58	66					1
Vitamin C, total ascorbic acid	mg	0	0	0					4
Vitamin A	IU	0	0	0					1
Fatty acids, total saturated	g	0	5.3	6.0					4
Fatty acids, total trans	g	0	0.85	0.96					4
Cholesterol	mg	0	70	79					1
Magnesium, Mg	mg	0	20	23					1
Phosphorus, P	mg	0	176	199					1
Potassium, K	mg	0	284	321					1
Zinc, Zn	mg	0	3.7	4.2					1
Selenium, Se	µg	0	12	14					1
Thiamin	mg	0	0.13	0.15					1
Riboflavin	mg	0	0.49	0.55					1
Niacin	mg	0	5.6	6.3					1
Pantothenic acid	mg	0	0.51	0.58					1
Vitamin B ₆	mg	0	0.30	0.34					1
Vitamin B ₁₂	µg	0	3.2	3.6					1
Vitamin D	µg	0	0.07	0.08					1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Lamb, grass-fed, shoulder, blade chop, bone-in

Urmis No: 2922

NDB No: Separable lean and fat, raw, 17523; Separable lean and fat, cooked, 17522; Separable lean only, 17487

Nutrient Name	Unit	N ^[1]	Lean and Fat				Lean Only		Source Code ^[2]
			Raw		Cooked (Roasted)		Cooked (Roasted)		
			100g	113g	100g	85g	100g	85g	
Water	g	0/0/1	65	73	59	50	66	56	1
Energy	Kcal	0	212	240	253	215	170	145	4
Calories from fat	Kcal	0	139	157	164	139	68	58	4
Protein	g	0/0/1	18	20	22	19	25	21	1
Total lipid (fat)	g	0/0/1	15	17	18	15	8	7	1
Ash	g	0/0/1	0.93	1.05	1.01	0.86	1.11	0.94	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	4
Fiber, total dietary	g	0	0	0	0	0	0	0	4/4/7
Sugars, total	g	0	0	0	0	0	0	0	4/4/7
Calcium, Ca	mg	0/0/1	14.0	15.8	16.0	13.6	16.0	13.6	1
Iron, Fe	mg	0/0/1	1.3	1.5	1.8	1.5	1.9	1.6	1
Sodium, Na	mg	0/0/1	62	70	67	57	74	63	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	4/4/7
Vitamin A	IU	0	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	6.9	7.8	8.3	7.0	3.4	2.9	4
Fatty acids, total trans	g	0	1.08	1.22	1.36	1.15	0.59	0.50	4
Cholesterol	mg	0/0/1	73	82	91	77	91	77	1
Magnesium, Mg	mg	0/0/1	16	18	20	17	22	19	1
Phosphorus, P	mg	0/0/1	145	164	174	148	194	165	1
Potassium, K	mg	0/0/1	243	275	280	238	312	265	1
Zinc, Zn	mg	0/0/1	3.9	4.4	5.5	4.7	6.5	5.5	1
Selenium, Se	µg	0/0/1	8	9	11	9	12	10	1
Thiamin	mg	0/0/1	0.08	0.09	0.11	0.09	0.12	0.10	1
Riboflavin	mg	0/0/1	0.31	0.35	0.42	0.36	0.48	0.41	1
Niacin	mg	0/0/1	4.1	4.6	5.6	4.7	6.2	5.3	1
Pantothenic acid	mg	0/0/1	0.42	0.47	0.54	0.46	0.59	0.50	1
Vitamin B ₆	mg	0/0/1	0.33	0.37	0.28	0.24	0.32	0.27	1
Vitamin B ₁₂	µg	0/0/1	2.9	3.3	4.2	3.6	4.8	4.1	1
Vitamin D	µg	0	0.07	0.08	0.07	0.06	0.07	0.06	1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Lamb, grain-fed, shoulder, blade chop, bone-in

Urmis No: 2922

NDB No: Separable lean and fat, raw, 17535; Separable lean and fat, cooked, 17534; Separable lean only, cooked, 17502

Nutrient Name	Unit	N ^[1]	Lean and Fat				Lean Only		Source Code ^[2]
			Raw		Cooked (Roasted)		Cooked (Roasted)		
			100g	113g	100g	85g	100g	85g	
Water	g	0/0/1	63	71	58	49	66	56	1
Energy	Kcal	0	240	271	257	218	171	145	4
Calories from fat	Kcal	0	171	193	169	144	70	59	4
Protein	g	0/0/1	16	18	22	19	25	21	1
Total lipid (fat)	g	0/0/1	19	21	19	16	8	7	1
Ash	g	0/0/1	0.83	0.94	0.87	0.74	1.02	0.87	1
Carbohydrate, by difference	g	0	1	1	0	0	0	0	4
Fiber, total dietary	g	0	0	0	0	0	0	0	4/4/7
Sugars, total	g	0	0	0	0	0	0	0	4/4/7
Calcium, Ca	mg	0/0/1	13.0	14.7	18.0	15.3	19.0	16.2	1
Iron, Fe	mg	0/0/1	1.4	1.6	1.9	1.6	2.0	1.7	1
Sodium, Na	mg	0/0/1	64	72	69	59	77	65	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	4/4/7
Vitamin A	IU	0	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	8.3	9.4	8.4	7.1	3.5	3.0	4
Fatty acids, total trans	g	0	1.34	1.51	1.23	1.05	0.51	0.43	4
Cholesterol	mg	0/0/1	80	90	86	73	86	73	1
Magnesium, Mg	mg	0/0/1	17	19	19	16	22	19	1
Phosphorus, P	mg	0/0/1	155	175	175	149	198	168	1
Potassium, K	mg	0/0/1	265	299	277	235	312	265	1
Zinc, Zn	mg	0/0/1	4.3	4.8	5.7	4.8	6.8	5.8	1
Selenium, Se	µg	0/0/1	13	15	14	12	15	13	1
Thiamin	mg	0/0/1	0.10	0.11	0.11	0.09	0.12	0.10	1
Riboflavin	mg	0/0/1	0.33	0.37	0.41	0.35	0.48	0.41	1
Niacin	mg	0/0/1	4.0	4.5	5.0	4.3	5.6	4.8	1
Pantothenic acid	mg	0/0/1	0.47	0.53	0.59	0.50	0.65	0.55	1
Vitamin B ₆	mg	0/0/1	0.21	0.24	0.24	0.20	0.28	0.24	1
Vitamin B ₁₂	µg	0/0/1	2.8	3.1	4.1	3.4	4.7	4.0	1
Vitamin D	µg	0	0.07	0.08	0.08	0.07	0.07	0.06	1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Lamb, grass-fed, rib rack, roast-ready, bone-in

Urmis No: 2942

NDB No: Separable lean and fat, raw 17517; Separable lean and fat, cooked, 17519; Separable lean only, 17484

Nutrient Name	Unit	N ^[1]	Lean and Fat				Lean Only		Source Code ^[2]
			Raw		Cooked (Roasted)		Cooked (Roasted)		
			100g	113g	100g	85g	100g	85g	
Water	g	0/0/1	59	67	54	46	63	54	1
Energy	Kcal	0	271	306	302	257	193	164	4
Calories from fat	Kcal	0	199	225	217	184	92	78	4
Protein	g	0/0/1	18	20	21	18	25	21	1
Total lipid (fat)	g	0/0/1	22	25	24	20	10	9	1
Ash	g	0/0/1	0.77	0.87	1.02	0.87	1.19	1.01	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	4
Fiber, total dietary	g	0	0	0	0	0	0	0	4/4/7
Sugars, total	g	0	0	0	0	0	0	0	4/4/7
Calcium, Ca	mg	0/0/1	12.0	13.6	15.0	12.8	14.0	11.9	1
Iron, Fe	mg	0/0/1	1.5	1.7	1.7	1.4	1.8	1.5	1
Sodium, Na	mg	0/0/1	55	62	63	54	72	61	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	4/4/7
Vitamin A	IU	0	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	10.0	11.3	11.1	9.4	4.6	3.9	4
Fatty acids, total trans	g	0	1.51	1.71	1.77	1.51	0.76	0.64	4
Cholesterol	mg	0/0/1	72	81	88	75	86	73	1
Magnesium, Mg	mg	0/0/1	18	20	19	16	22	19	1
Phosphorus, P	mg	0/0/1	153	173	152	129	174	148	1
Potassium, K	mg	0/0/1	246	278	256	218	295	251	1
Zinc, Zn	mg	0/0/1	2.5	2.8	3.3	2.8	3.9	3.3	1
Selenium, Se	µg	0/0/1	9	10	10	9	12	10	1
Thiamin	mg	0/0/1	0.10	0.11	0.11	0.09	0.13	0.11	1
Riboflavin	mg	0/0/1	0.26	0.30	0.40	0.34	0.49	0.42	1
Niacin	mg	0/0/1	5.7	6.5	5.3	4.5	6.1	5.2	1
Pantothenic acid	mg	0/0/1	0.39	0.44	0.43	0.37	0.47	0.40	1
Vitamin B ₆	mg	0/0/1	0.31	0.35	0.35	0.30	0.42	0.36	1
Vitamin B ₁₂	µg	0/0/1	1.8	2.0	2.4	2.0	2.6	2.2	1
Vitamin D	µg	0	0.07	0.08	0.07	0.06	0.07	0.06	1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Lamb, grain-fed, rib, rack, roast-ready, bone-in

Urmis No: 2942

NDB No: Separable lean and fat, raw, 17530, Separable lean and fat, cooked, 17541, Separable lean only, cooked, 17471

Nutrient Name	Unit	N ^[1]	Lean and Fat				Lean Only		Source Code ^[2]
			Raw		Cooked (Roasted)		Cooked (Roasted)		
			100g	113g	100g	85g	100g	85g	
Water	g	0/0/1	60	68	50	43	62	53	1
Energy	Kcal	0	265	299	345	293	207	176	4
Calories from fat	Kcal	0	193	218	264	224	107	91	4
Protein	g	0/0/1	18	20	19	16	24	20	1
Total lipid (fat)	g	0/0/1	21	24	29	25	12	10	1
Ash	g	0/0/1	0.77	0.87	0.70	0.60	0.93	0.79	1
Carbohydrate, by difference	g	0	0.58	0.66	2	2	1	1	4
Fiber, total dietary	g	0	0	0	0	0	0	0	4/4/7
Sugars, total	g	0	0	0	0	0	0	0	4/4/7
Calcium, Ca	mg	0/0/1	12.6	14.2	14.0	11.9	13.5	11.5	1
Iron, Fe	mg	0/0/1	1.4	1.6	1.7	1.5	1.9	1.6	1
Sodium, Na	mg	0/0/1	57	64	60	51	71	60	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	4/4/7
Vitamin A	IU	0	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	9.4	10.6	13.0	11.1	5.3	4.5	4
Fatty acids, total trans	g	0	1.49	1.68	1.94	1.64	0.78	0.67	4
Cholesterol	mg	0/0/1	83	94	92	78	95	81	1
Magnesium, Mg	mg	0/0/1	18	20	18	15	22	19	1
Phosphorus, P	mg	0/0/1	161	182	152	129	187	159	1
Potassium, K	mg	0/0/1	267	302	241	205	293	249	1
Zinc, Zn	mg	0/0/1	2.6	2.9	2.9	2.5	3.7	3.1	1
Selenium, Se	µg	0/0/1	15	17	15	13	18	15	1
Thiamin	mg	0/0/1	0.10	0.11	0.11	0.09	0.14	0.12	1
Riboflavin	mg	0/0/1	0.31	0.35	0.35	0.30	0.46	0.39	1
Niacin	mg	0/0/1	6.5	7.3	6.3	5.4	7.9	6.7	1
Pantothenic acid	mg	0/0/1	0.41	0.46	0.58	0.50	0.71	0.60	1
Vitamin B ₆	mg	0/0/1	0.33	0.37	0.30	0.26	0.40	0.34	1
Vitamin B ₁₂	µg	0/0/1	1.9	1.34	2.3	2.0	2.6	2.2	1
Vitamin D	µg	0	0.07	0.08	0.08	0.07	0.07	0.06	1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Lamb, grass-fed, rib, rack, roast-ready, frenched, cap-off, bone-in

Urmis No:

NDB No: Separable lean and fat, raw, 17518, Separable lean and fat, cooked,17520, Separable lean only, cooked, 17485

Nutrient Name	Unit	N ^[1]	Lean and Fat				Lean Only		Source Code ^[2]
			Raw		Cooked (Roasted)		Cooked (Roasted)		
			100g	113g	100g	85g	100g	85g	
Water	g	0/0/1	66	75	55	47	64	54	1
Energy	Kcal	0	196	221	290	247	183	156	4
Calories from fat	Kcal	0	117	132	206	175	83	71	4
Protein	g	0/0/1	20	23	21	18	25	21	1
Total lipid (fat)	g	0/0/1	13	15	23	20	9	8	1
Ash	g	0/0/1	0.92	1.04	1.46	1.24	1.78	1.51	1
Carbohydrate, by difference	g	0	0.1	0.1	0	0	0	0	4
Fiber, total dietary	g	0	0	0	0	0	0	0	4/4/7
Sugars, total	g	0	0	0	0	0	0	0	4/4/7
Calcium, Ca	mg	0/0/1	11.2	12.7	14.9	12.7	14.5	12.3	1
Iron, Fe	mg	0/0/1	1.7	1.9	1.8	1.5	1.9	1.6	1
Sodium, Na	mg	0/0/1	55	62.	61	52	69	59	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	4/4/7
Vitamin A	IU	0	0	0	0	0	0	0	1
Fatty acids, total saturated	g		5.9	6.7	10.6	9.0	4.3	3.7	4
Fatty acids, total trans	g	0	0.90	1.01	1.68	1.43	0.68	0.58	4
Cholesterol	mg	0/0/1	89	101	92	78	92	78	1
Magnesium, Mg	mg	0/0/1	21	24	20	17	23	20	1
Phosphorus, P	mg	0/0/1	170	192	167	142	193	164	1
Potassium, K	mg	0/0/1	292	330	260	221	299	254	1
Zinc, Zn	mg	0/0/1	2.5	2.8	3.2	2.7	3.8	3.2	1
Selenium, Se	µg	0/0/1	9	10	11	9	13	11	1
Thiamin	mg	0/0/1	0.12	0.14	0.12	0.10	0.14	0.12	1
Riboflavin	mg	0/0/1	0.36	0.41	0.35	0.29	0.41	0.35	1
Niacin	mg	0/0/1	6.8	7.7	6.3	5.4	7.5	6.4	1
Pantothenic acid	mg	0/0/1	0.40	0.45	0.48	0.41	0.54	0.46	1
Vitamin B ₆	mg	0/0/1	0.39	0.44	0.38	0.32	0.47	0.40	1
Vitamin B ₁₂	µg	0/0/1	1.7	1.9	2.4	2.0	2.6	2.2	1
Vitamin D	µg	0	0.07	0.08	0.07	0.06	0.07	0.06	1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Lamb, grain-fed, rib, rack, roast-ready, frenched, cap-off, bone-in

Urmis No:

NDB No: Separable lean and fat, raw, 17530; Separable lean and fat, cooked, 17532; Separable lean only, cooked, 17498

Nutrient Name	Unit	N ^[1]	Lean and Fat				Lean Only		Source Code ^[2]
			Raw		Cooked (Roasted)		Cooked (Roasted)		
			100g	113g	100g	85g	100g	85g	
Water	g	0/0/1	60	68	53	45	63	54	1
Energy	Kcal	0	265	299	310	264	198	168	4
Calories from fat	Kcal	0	193	218	223	190	95	81	4
Protein	g	0/0/1	18	20	21	18	25	21	1
Total lipid (fat)	g	0/0/1	21	24	25	21	11	9	1
Ash	g	0/0/1	0.77	0.87	0.63	0.54	0.77	0.65	1
Carbohydrate, by difference	g	0	1	1	1	1	1	1	4
Fiber, total dietary	g	0	0	0	0	0	0	0	4/4/7
Sugars, total	g	0	0	0	0	0	0	0	4/4/7
Calcium, Ca	mg	0/0/1	13.0	14.7	12.0	10.2	12.0	10.2	1
Iron, Fe	mg	0/0/1	1.4	1.6	1.8	1.5	2.0	1.7	1
Sodium, Na	mg	0/0/1	57	64	55	47	62	53	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	4/4/7
Vitamin A	IU	0	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	9.4	10.7	11.1	9.4	4.8	4.1	4
Fatty acids, total trans	g	0	1.49	1.68	1.63	1.38	0.69	0.59	4
Cholesterol	mg	0/0/1	83	94	91	77	93	79	1
Magnesium, Mg	mg	0/0/1	18	20	19	16	23	20	1
Phosphorus, P	mg	0/0/1	161	182	169	144	200	170	1
Potassium, K	mg	0/0/1	267	302	266	226	313	266	1
Zinc, Zn	mg	0/0/1	2.7	3.0	3.2	2.7	3.9	3.3	1
Selenium, Se	µg	0/0/1	15	17	17	14	19	16	1
Thiamin	mg	0/0/1	0.10	0.11	0.12	0.10	0.14	0.12	1
Riboflavin	mg	0/0/1	0.31	0.35	0.38	0.32	0.47	0.40	1
Niacin	mg	0/0/1	6.5	7.4	5.0	4.2	5.7	4.9	1
Pantothenic acid	mg	0/0/1	0.41	0.46	0.59	0.50	0.68	0.58	1
Vitamin B ₆	mg	0/0/1	0.33	0.37	0.34	0.29	0.42	0.36	1
Vitamin B ₁₂	µg	0/0/1	1.9	2.1	2.6	2.2	3.0	2.5	1
Vitamin D	µg	0	0.07	0.08	0.08	0.07	0.07	0.06	1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Lamb, grass-fed, loin chop, bone-in

Urmis No: 2955

NDB No: Separable lean and fat, raw 17516; Separable lean and fat, cooked 17539; Separable lean only, 17480

Nutrient Name	Unit	N ^[1]	Lean and Fat				Lean Only		Source Code ^[2]
			Raw		Cooked (Roasted)		Cooked (Roasted)		
			100g	113g	100g	85g	100g	85g	
Water	g	0/0/1	63	71	61	52	66	56	1
Energy	Kcal	0	233	263	219	186	162	138	4
Calories from fat	Kcal	0	158	179	118	100	52	44	4
Protein	g	0/0/1	19	21	25	21	27	23	1
Total lipid (fat)	g	0/0/1	18	20	13	11	6	5	1
Ash	g	0/0/1	0.96	1.08	1.19	1.01	1.28	1.10	1
Carbohydrate, by difference	g	0	0	0	0	0	0	0	4
Fiber, total dietary	g	0	0	0	0	0	0	0	4/4/7
Sugars, total	g	0	0	0	0	0	0	0	4/4/7
Calcium, Ca	mg	0/0/1	11.0	12.4	13.0	11.1	12.0	10.2	1
Iron, Fe	mg	0/0/1	1.7	1.9	2.4	2.0	2.5	2.1	1
Sodium, Na	mg	0/0/1	61	69	63	54	67	57	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	4/4/7
Vitamin A	IU	0	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	7.9	8.9	6.0	5.1	2.6	2.2	4
Fatty acids, total trans	g	0	1.19	1.35	0.98	0.83	0.43	0.37	4
Cholesterol	mg	0/0/1	69	78	92	78	92	78	1
Magnesium, Mg	mg	0/0/1	20	23	24	20	26	22	1
Phosphorus, P	mg	0/0/1	172	194	204	173	220	187	1
Potassium, K	mg	0/0/1	277	313	318	270	342	291	1
Zinc, Zn	mg	0/0/1	2.3	2.6	3.1	2.6	3.3	2.8	1
Selenium, Se	µg	0/0/1	9	10	12	10	13	11	1
Thiamin	mg	0/0/1	0.13	0.14	0.15	0.13	0.16	0.14	1
Riboflavin	mg	0/0/1	0.48	0.54	0.58	0.49	0.64	0.54	1
Niacin	mg	0/0/1	5.9	6.7	8.6	7.3	9.4	7.9	1
Pantothenic acid	mg	0/0/1	0.35	0.40	0.44	0.37	0.46	0.39	1
Vitamin B ₆	mg	0/0/1	0.40	0.45	0.53	0.45	0.58	0.50	1
Vitamin B ₁₂	µg	0/0/1	1.4	1.6	2.4	2.0	2.5	2.1	1
Vitamin D	µg	0	0.07	0.08	0.07	0.06	0.07	0.06	1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Lamb, grain-fed, loin chop, bone-in

Urmis No: 2955

NDB No: Separable lean and fat, raw, 17529; Separable lean and fat, cooked, 17528; Separable lean only, 17496

Nutrient Name	Unit	N ^[1]	Lean and Fat				Lean Only		Source Code ^[2]
			Raw		Cooked (Roasted)		Cooked (Roasted)		
			100g	113g	100g	85g	100g	85g	
Water	g	0/0/1	62	70	61	52	66	56	1
Energy	Kcal	0	249	281	216	184	162	138	4
Calories from fat	Kcal	0	178	201	117	99	55	47	4
Protein	g	0/0/1	18	20	24	20	26	22	1
Total lipid (fat)	g	0/0/1	20	23	13	11	6	5	1
Ash	g	0/0/1	0.88	0.99	0.87	0.74	0.95	0.81	1
Carbohydrate, by difference	g	0	0	0	1	1	1	1	4
Fiber, total dietary	g	0	0	0	0	0	0	0	4/4/7
Sugars, total	g	0	0	0	0	0	0	0	4/4/7
Calcium, Ca	mg	0/0/1	12.0	13.6	16.0	13.6	16.0	13.6	1
Iron, Fe	mg	0/0/1	1.6	1.8	2.2	1.9	2.3	1.9	1
Sodium, Na	mg	0/0/1	58	66	65	55	68	58	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	0	0	4/4/7
Vitamin A	IU	0	0	0	0	0	0	0	1
Fatty acids, total saturated	g	0	8.7	9.8	5.7	4.8	2.6	2.2	4
Fatty acids, total trans	g	0	1.35	1.53	0.86	0.73	0.41	0.35	4
Cholesterol	mg	0/0/1	73	82	91	77	92	78	1
Magnesium, Mg	mg	0/0/1	21	24	23	20	25	21	1
Phosphorus, P	mg	0/0/1	173	195	201	171	216	184	1
Potassium, K	mg	0/0/1	276	312	309	263	332	282	1
Zinc, Zn	mg	0/0/1	2.4	2.7	3.3	2.8	3.6	3.0	1
Selenium, Se	µg	0/0/1	16	18	16	14	16	14	1
Thiamin	mg	0/0/1	0.12	0.14	0.14	0.12	0.15	0.13	1
Riboflavin	mg	0/0/1	0.49	0.55	0.51	0.43	0.56	0.48	1
Niacin	mg	0/0/1	5.2	5.8	7.3	6.2	7.9	6.7	1
Pantothenic acid	mg	0/0/1	0.43	0.49	0.56	0.48	0.59	0.50	1
Vitamin B ₆	mg	0/0/1	0.37	0.42	0.46	0.39	0.51	0.43	1
Vitamin B ₁₂	µg	0/0/1	1.8	2.0	2.6	2.2	2.7	2.3	1
Vitamin D	µg	0	0.07	0.08	0.08	0.06	0.07	0.06	1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Lamb, grass-fed, leg, foreshank, bone-in
 Urmis No: 3010
 NDB No: Separable lean and fat, raw, 17537

Nutrient Name	Unit	N ^[1]	Lean and Fat				Lean Only		Source Code ^[2]
			Raw		Cooked (Roasted)		Cooked (Roasted)		
			100g	113g	100g	85g	100g	85g	
Water	g	0	70	79					1
Energy	Kcal	0	165	186					4
Calories from fat	Kcal	0	90	102					4
Protein	g	0	19	21					1
Total lipid (fat)	g	0	10	11					1
Ash	g	0	0.88	0.99					1
Carbohydrate, by difference	g	0	0	0					4
Fiber, total dietary	g	0	0	0					4
Sugars, total	g	0	0	0					4
Calcium, Ca	mg	0	12.0	13.6					1
Iron, Fe	mg	0	1.7	1.9					1
Sodium, Na	mg	0	81	92					1
Vitamin C, total ascorbic acid	mg	0	0	0					4
Vitamin A	IU	0	0	0					1
Fatty acids, total saturated	g	0	4.4	5.0					4
Fatty acids, total trans	g	0	0.69	0.78					4
Cholesterol	mg	0	78	88					1
Magnesium, Mg	mg	0	19	21					1
Phosphorus, P	mg	0	164	185					1
Potassium, K	mg	0	283	320					1
Zinc, Zn	mg	0	5.1	5.8					1
Selenium, Se	µg	0	9	10					1
Thiamin	mg	0	0.09	0.10					1
Riboflavin	mg	0	0.28	0.32					1
Niacin	mg	0	5.3	6.0					1
Pantothenic acid	mg	0	0.43	0.49					1
Vitamin B ₆	mg	0	0.24	0.27					1
Vitamin B ₁₂	µg	0	2.2	2.5					1
Vitamin D	µg	0	0.07	0.08					1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Lamb, grain-fed, leg, foreshank, bone-in

Urmis No: 3010

NDB No: Separable lean and fat, raw, 17540

Nutrient Name	Unit	N ^[1]	Lean and Fat				Lean Only		Source Code ^[2]
			Raw		Cooked (Roasted)		Cooked (Roasted)		
			100g	113g	100g	85g	100g	85g	
Water	g	0	68	77					1
Energy	Kcal	0	194	219					4
Calories from fat	Kcal	0	119	134					4
Protein	g	0	19	21					1
Total lipid (fat)	g	0	13	15					1
Ash	g	0	0.94	1.06					1
Carbohydrate, by difference	g	0	0	0					4
Fiber, total dietary	g	0	0	0					4
Sugars, total	g	0	0	0					4
Calcium, Ca	mg	0	13.0	14.7					1
Iron, Fe	mg	0	1.5	1.7					1
Sodium, Na	mg	0	73	82					1
Vitamin C, total ascorbic acid	mg	0	0	0					4
Vitamin A	IU	0	0	0					1
Fatty acids, total saturated	g	0	5.8	6.6					4
Fatty acids, total trans	g	0	0.92	1.04					4
Cholesterol	mg	0	76	86					1
Magnesium, Mg	mg	0	18	20					1
Phosphorus, P	mg	0	159	180					1
Potassium, K	mg	0	264	298					1
Zinc, Zn	mg	0	4.9	5.5					1
Selenium, Se	µg	0	14	16					1
Thiamin	mg	0	0.09	0.10					1
Riboflavin	mg	0	0.30	0.34					1
Niacin	mg	0	5.1	5.7					1
Pantothenic acid	mg	0	0.53	0.60					1
Vitamin B ₆	mg	0	0.22	0.25					1
Vitamin B ₁₂	µg	0	2.3	2.6					1
Vitamin D	µg	0	0.07	0.08					1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.

[2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Lamb, grass-fed, ground

Urmis No: 2998

NDB No: Raw, 17475; Cooked, 17474

Nutrient Name	Unit	N ^[1]	Raw		Cooked (Pan-Grilled)		Source Code ^[2]
			100g	113g	100g	85g	
Water	g	1	65	73	58	49	1
Energy	Kcal	0	211	238	228	194	4
Calories from fat	Kcal	0	135	153	116	99	4
Protein	g	1	17	19	27	23	1
Total lipid (fat)	g	1	15	17	13	11	1
Ash	g	1	0.92	1.04	1.22	1.04	1
Carbohydrate, by difference	g	0	2	2	1	1	4
Fiber, total dietary	g	0	0	0	0	0	7
Sugars, total	g	0	0	0	0	0	7
Calcium, Ca	mg	1	9.0	10.2	24.0	20.4	1
Iron, Fe	mg	1	1.6	1.8	2.3	2.0	1
Sodium, Na	mg	1	58	66	81	69	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	7
Vitamin A	IU	0	0	0	0	0	1
Fatty acids, total saturated	g	0	6.8	7.7	5.5	4.7	4
Fatty acids, total trans	g	0	1.01	1.14	1.01	0.86	4
Cholesterol	mg	1	70	79	89	76	1
Magnesium, Mg	mg	1	18	20	28	24	1
Phosphorus, P	mg	1	159	180	252	214	1
Potassium, K	mg	1	262	296	399	339	1
Zinc, Zn	mg	1	3.1	3.5	4.8	4.1	1
Selenium, Se	µg	1	8	9	12	10	1
Thiamin	mg	1	0.12	0.14	0.15	0.13	1
Riboflavin	mg	1	0.35	0.40	0.54	0.46	1
Niacin	mg	1	5.1	5.8	8.0	6.8	1
Pantothenic acid	mg	1	0.51	0.58	0.65	0.55	1
Vitamin B ₆	mg	1	0.29	0.33	0.45	0.38	1
Vitamin B ₁₂	µg	1	2.2	2.5	4.0	3.4	1
Vitamin D	µg	0	0.07	0.08	0.07	0.06	1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.
 [2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Lamb, grain-fed, ground

Urmis No: 2998

NDB No: Raw, 17491; Cooked, 17490

Nutrient Name	Unit	N ^[1]	Raw		Cooked (Pan-Grilled)		Source Code ^[2]
			100g	113g	100g	85g	
Water	g	1	64	72	59	50	1
Energy	Kcal	0	243	275	227	193	4
Calories from fat	Kcal	0	176	199	121	103	4
Protein	g	1	17	19	25	21	1
Total lipid (fat)	g	1	20	23	13	11	1
Ash	g	1	1.05	1.19	1.03	0.88	1
Carbohydrate, by difference	g	0	0.00	0.00	1	1	4
Fiber, total dietary	g	0	0	0	0	0	7
Sugars, total	g	0	0	0	0	0	7
Calcium, Ca	mg	1	8.0	9.0	12.0	10.2	1
Iron, Fe	mg	1	1.4	1.6	2.1	1.8	1
Sodium, Na	mg	1	53	60	72	61	1
Vitamin C, total ascorbic acid	mg	0	0	0	0	0	7
Vitamin A	IU	0	0	0	0	0	1
Fatty acids, total saturated	g	0	9.0	10.2	5.9	5.0	4
Fatty acids, total trans	g	0	0.90	1.02	0.90	0.76	4
Cholesterol	mg	1	66	75	89	76	1
Magnesium, Mg	mg	1	18	20	24	20	1
Phosphorus, P	mg	1	153	173	220	187	1
Potassium, K	mg	1	246	278	359	305	1
Zinc, Zn	mg	1	3.0	3.4	4.6	3.9	1
Selenium, Se	µg	1	11	12	16	14	1
Thiamin	mg	1	0.11	0.12	0.14	0.12	1
Riboflavin	mg	1	0.27	0.31	0.52	0.44	1
Niacin	mg	1	5.6	6.3	8.8	7.5	1
Pantothenic acid	mg	1	0.49	0.55	0.64	0.54	1
Vitamin B ₆	mg	1	0.29	0.33	0.37	0.31	1
Vitamin B ₁₂	µg	1	2.8	3.2	3.7	3.1	1
Vitamin D	µg	0	0.07	0.08	0.07	0.06	1

[1] For some items, the number of observations may differ for lean and fat raw, lean and fat cooked, and lean only cooked. In these cases, the N values for each of the preparations are shown respectively. An N of zero represents an estimated or calculated value.
 [2] Source codes: SC =1 – Analytical data, SC= 4 – Imputed data and # of observations set at 0, SC=6 – Recipe or known formulation, no adjustments applied, SC=7 - Assumed zero.

Appendix A – Analytical methods

NUTRIENT	TECHNIQUE	METHOD (see reference list for complete citations)
Nitrogen	Combustion	AOAC 992.15 Protein (Crude)
Fat	Extraction	AOAC 983.23 (45.4.02) Fat in Foods, Chloroform-Methanol Extraction Method
Ash	Gravimetric	AOAC 923.03 + 920.153
Moisture	Forced air	AOAC 950.46 + 934.01
Minerals (except Selenium)	Inductively coupled plasma (ICP)	AOAC 985.01 (3.2.06) + 984.27 (50.1.15) Metals in Food by ICP
Selenium	ICP/Mass spectrometry	AOAC 2011.19 (50.1.41) Chromium, Selenium and Molybdenum in Infant Formula and Adult Nutritional Products (modified)
Thiamin	Liquid chromatography (HPLC)	HPLC method with post column fluorescence derivatization for total thiamin
Riboflavin	Microbiological	AOAC 940.3 + 960.46
Niacin	Microbiological	AOAC 944.13 + 960.46
Pantothenic Acid	Microbiological	AOAC 945.74 + 960.46
Vitamin B6	Microbiological	AOAC 961.15
Vitamin B12	Microbiological	AOAC 952.20 + 960.46
Choline	Mass spectrometry	Koc et al., 2002
Fatty acids	Gas chromatography (GC)	AOAC 996.06 Fat (Total, Saturated and Monosaturated in foods, Phillips et al., 2010)
Vitamin E	Liquid chromatography (HPLC)	UV detection with external calibration and internal standard recovery post analysis, Njeru et al., 1995
Vitamin D3 and 25-hydroxy D3	Liquid chromatography/mass	Huang et al., 2009
Cholesterol	GC/Direct saponification	Dinh et al., 2008

Appendix B: Proximates content per 100 grams of “separable lean” meat, raw

Description	Nutrient	Unit	100g	N	Source Code
Lamb, grass-fed, leg, whole (shank and sirloin), boneless, separable lean only, raw	Water	g	74.34	1	1
	Protein	g	21.43	1	1
	Total Lipid (fat)	g	4.19	1	1
	Ash	g	1.02	1	1

Description	Nutrient	Unit	100g	N	Source Code
Lamb, grain-fed, leg, whole (shank and sirloin), boneless, separable lean only, raw	Water	g	73.58	1	1
	Protein	g	20.46	1	1
	Total Lipid (fat)	g	4.36	1	1
	Ash	g	0.91	1	1

Description	Nutrient	Unit	100g	N	Source Code
Lamb, grass-fed, shoulder, arm chop, bone-in, separable lean only, raw	Water	g	74.38	1	1
	Protein	g	20.37	1	1
	Total Lipid (fat)	g	4.51	1	1
	Ash	g	0.96	1	1

Description	Nutrient	Unit	100g	N	Source Code
Lamb, grain-fed, shoulder, arm chop, bone-in, separable lean only, raw	Water	g	74.76	1	1
	Protein	g	19.77	1	1
	Total Lipid (fat)	g	3.84	1	1
	Ash	g	1.02	1	1

Description	Nutrient	Unit	100g	N	Source Code
Lamb, grass-fed, shoulder, blade chop, bone-in, separable lean only, raw	Water	g	72.22	1	1
	Protein	g	19.69	1	1
	Total Lipid (fat)	g	6.52	1	1
	Ash	g	1.04	1	1

Description	Nutrient	Unit	100g	N	Source Code
Lamb, grain-fed, shoulder, blade chop, bone-in, separable lean only, raw	Water	g	72.09	1	1
	Protein	g	18.25	1	1
	Total Lipid (fat)	g	7.22	1	1
	Ash	g	0.92	1	1

Description	Nutrient	Unit	100g	N	Source Code
Lamb, grass-fed, rib chop, bone-in, separable lean only, raw	Water	g	69.75	1	1
	Protein	g	21.08	1	1
	Total Lipid (fat)	g	7.73	1	1
	Ash	g	0.89	1	1

Description	Nutrient	Unit	100g	N	Source Code
Lamb, grain-fed, rib chop, bone-in, separable lean only, raw	Water	g	70.40	1	1
	Protein	g	20.86	1	1
	Total Lipid (fat)	g	6.99	1	1
	Ash	g	0.89	1	1

Description	Nutrient	Unit	100g	N	Source Code
Lamb, grass-fed, rib chop, frenched, cap-off, bone-in, separable lean only, raw	Water	g	71.59	1	1
	Protein	g	21.38	1	1
	Total Lipid (fat)	g	5.63	1	1
	Ash	g	1.00	1	1

Description	Nutrient	Unit	100g	N	Source Code
Lamb, grain-fed, rib chop, frenched, cap-off, bone-in, separable lean only, raw	Water	g	71.45	1	1
	Protein	g	21.01	1	1
	Total Lipid (fat)	g	6.32	1	1
	Ash	g	0.83	1	1

Description	Nutrient	Unit	100g	N	Source Code
Lamb, grass-fed, loin, block-ready, bone-in, separable lean only, raw	Water	g	73.10	1	1
	Protein	g	21.32	1	1
	Total Lipid (fat)	g	4.70	1	1
	Ash	g	1.10	1	1

Description	Nutrient	Unit	100g	N	Source Code
Lamb, grain-fed, loin, block-ready, bone-in, separable lean only, raw	Water	g	72.66	1	1
	Protein	g	20.77	1	1
	Total Lipid (fat)	g	5.45	1	1
	Ash	g	1.04	1	1

Description	Nutrient	Unit	100g	N	Source Code
Lamb, grass-fed, leg, foreshank, bone-in, separable lean only, raw	Water	g	76.28	1	1
	Protein	g	20.10	1	1
	Total Lipid (fat)	g	2.41	1	1
	Ash	g	0.94	1	1

Description	Nutrient	Unit	100g	N	Source Code
Lamb, grain-fed, leg, foreshank, bone-in, separable lean only, raw	Water	g	75.41	1	1
	Protein	g	20.83	1	1
	Total Lipid (fat)	g	3.14	1	1
	Ash	g	1.05	1	1