Background information on protein

The recommended protein intake according to Finnish nutritional recommendations[1]:

• Adults and children over the age of 2: Recommended protein intake is 10–20 E%.
• Recommended protein intake per kilogram of body weight is: 1.1–1.3 g/kg for adults between 18–64 and 1.2–1.4 g/kg for adults over 65.

Proteins are made up of amino acids. Proteins include 20 different amino acids, nine of which (histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan and valine) are essential and must be acquired from the food you consume. The remaining 11 amino acids can be produced in the body from compounds containing carbon and nitrogen, or from essential amino acids.[2]

All essential amino acids can be found in products made from animal and vegetable sources. You can get the essential amino acids you need from one animal-based food or by combining two plant-based foods. Plant-based protein sources become complete when legumes (peas, lentils, beans) are combined with grains, nuts or seeds.[3]

Pulled Oats® combines fava beans, yellow peas and oats. It's the easiest (and tastiest!) way to get all the amino acids you need. The table below compares the amino acid needs[4] of an average-weight Finnish woman (70.4 kg[5]) with the amino acid composition of Pulled Oats® and various meats[6].

The products that deliver the recommended daily amino acids in 100 g of product are marked in green. The products that deliver the recommended daily amount of amino acids in 150 g are marked in yellow. And the products that deliver the recommended daily amino acids in over 150 g are marked in red.

Amino acid	Need, mg/kilogram of weight	Pulled Oats®	Beef steak	Pork sirloin	Chicken breast
Isoleucine	20				
Leucine	39				
Lysine	30				
Methionine + cysteine	15				
Phenylalanine	25				
Threonine	15				
Tryptophan	4				
Valine	26				
Histidine	10				

All of the dietary choices you make impact how balanced your diet is, so you should really think about your diet as a whole. The amount and quality of the fats you consume and fiber content are an essential part of a healthy diet. The amount of vitamin B-12 and minerals like iron are also particularly important. Pulled Oats® is full of iron and a great source of fiber and potassium, and all that goodness comes with zero saturated fats.

The assumptions and factors used in the counter:

The table below shows the protein content of various products. The protein content of Pulled Oats® is based on the composition of the unflavored Pulled Oats® Nude. The source used to calculate the protein content of the meats in the table is based on information about Fineli meats.[7] The protein content of meat products varies greatly according to the different cuts of meat. We have tried to select cuts of meat that are as close to the most common uses of Pulled Oats® as possible.

Protein content, uncooked	g / 100 g of product	Source
Pulled Oats®	29,8	Pulled Oats® Nude
Minced beef (17%)	19,1	THL* 2018, fineli.fi
Pork sirloin	21,5	THL* 2018, fineli.fi
Chicken breast	22,4	THL* 2018, fineli.fi

**National Institute for Health and Welfare*

The counter is based on average Finnish weights:

Average weight	kg	Source
Woman	70,4	THL, FINRISKI 2012 -tutkimus
Man	85,5	THL, FINRISKI 2012 -tutkimus
Child, 1-5 years	15	Laskettu kasvukäyristä keskiarvo (kasvikayra.fi)
Child, 6-10 years	28,0	Laskettu kasvukäyristä keskiarvo (kasvikayra.fi)
Child, 11-15 years	47,5	Laskettu kasvukäyristä keskiarvo (kasvikayra.fi)
Child, over 15 years	62,5	Laskettu kasvukäyristä keskiarvo (kasvikayra.fi)

More information:
• Aro, Antti (2015), Proteiinit ja aminohapot, Terveyskirjasto, Artikkelin tunnus: skr00015 (001.015), © 2017 Kustannus Oy Duodecim
• R.A. Lawrie & D.A. Ledward (2006), Lawrie's Meat Science (original source: Schweigert and Payne, 1956), 7th edition, Woodhead Publishing Limited
• National Institute for Health and Welfare (2018), Fineli database, can be read (in Finnish) here: https://fineli.fi/fineli/fi/index
• Tom Coultate (2009): Food – The chemistry of its components (5th ed.) Data calculated based on McCance & Widdowsons (1980), The Composition of Foods, ed. A.A. Paul, D.A.T. Southgate and J. Russell, HMSO, London.
• National Nutrition Council (2014), Terveyttä ruoasta – Suomalaiset ravitsemussuositukset 2014, 2nd updated edition can be read (in Finnish) here: https://www.evira.fi/globalassets/vrn/pdf/ravitsemussuositukset_2014_fi_web.3_es-1.pdf (viitattu 14.2.2018)
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The calculator and background documentation was prepared in February 2018 by Gaia Consulting Ltd, which specializes in sustainable development. For more information: www.gaia.fi

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[1] National Institute for Health and Welfare (2014), Terveyttä ruoasta – Suomalaiset ravitsemussuositukset 2014, 2nd updated edition can be read (in Finnish) at: https://www.evira.fi/globalassets/vrn/pdf/ravitsemussuositukset_2014_fi_web.3_es-1.pdf (referenced 14.2.2018)
[2] Aro, Antti (2015), Proteiinit ja aminohapot, Terveyskirjasto, Article number: skr00015 (001.015), © 2017 Kustannus Oy Duodecim
[3] National Nutrition Council (2014), Terveyttä ruoasta – Suomalaiset ravitsemussuositukset 2014, 2nd updated edition can be read (in Finnish) at: https://www.evira.fi/globalassets/vrn/pdf/ravitsemussuositukset_2014_fi_web.3_es-1.pdf (referenced 14.2.2018)
[4] Source of amino acid requirements: WHO (2002), Protein and amino acid requirements in human nutrition : report of a joint FAO/WHO/UNU expert consultation. WHO technical report series; no. 935. Can be read at: http://apps.who.int/iris/bitstream/10665/43411/1/WHO_TRS_935_eng.pdf (referenced 14.2.2018)
[5] National Institute for Health and Welfare, FINRISKI 2012 study
[6] Source of amount of amino acids : Pork: R.A. Lawrie & D.A. Ledward (2006), Lawrie's meat science (original source: Schweigert and Payne, 1956), 7. edition, Woodhead Publishing Limited, Chicken & beef: Tom Coultate (2009): Food – The chemistry of its components (5th ed.)
Data calculated based on McCance & Widdowsons (1980), The Composition of Foods, ed. A.A. Paul, D.A.T. Southgate and J. Russell, HMSO, London.
[7] National Institute for Health and Welfare (2018), Fineli database, available here: https://fineli.fi/fineli/fi/index