

AIJN position on nutrient profile schemes

AIJN, the European Fruit Juice Association, is the representative association of fruit juice producers in the EU for over 50 years. It represents the industry from the fruit processors to the packers of the consumer products.

In the context of growing emphasis on the importance of sufficient fruit and vegetable intake, we strongly recommend that fruit and vegetable juices are exempt from nutrient profiling. Furthermore, AIJN firmly believes that any nutrient profile scheme should be based on sound nutrition science and established per category of foods. The profiling system should take into account the nutrients of health concern as well as those for which consumers are encouraged to increase their intake of. Therefore, every system should fully consider the overall composition of a given food and evaluate this in the light of its contribution to the overall diet.

Fruit and vegetable juices are directly derived from fruits and vegetables. They are minimally processed, without any added sugar¹, and have a similar composition containing most of the beneficial constituents that are naturally present in fruit and vegetables. When comparing the macronutrient composition of fresh fruits with fruit juice, we observe that the products are similar (table 1). As an example, on average, fresh fruit provides 55,1kcal/100g and 11,2 g of carbohydrates per 100g (including 9,38 g of sugar). Similarly, fruit juice provides an average of 41,3 kcal/100g and 8,7 g of carbohydrates per 100g, of which 8,1 g are sugars.

	Fruit (average)	Fruit juice (average)	Carrot (raw)	Carrot (juice)	Apple (raw)	Apple (juice)	Orange (raw)	Orange (juice)	Tomato (raw)	Tomato (juice)
Energy (kcal/100 g)	55,1	41,3	36,3	26,6	53,2	42,4	46,5	43,7	16,4	20,8
Protein (g/100g)	0,66	0,57	0,8	0,82	0,31	<0,1	0,96	0,71	0,8	0,73
Carbohydrates (g/100g)	11,2	8,66	6,6	5,1	11,3	9,95	8,32	9,39	1,72	3,86
Fat (g/100g)	0,22	0,10	0,26	0,1	0,16	<0,1	0,26	<0,1	0,26	0,03
Sugar (g/100g)	9,38	8,1	4,86	5,1	11,3	9,67	8,32	8,69	1,68	3,51

Table 1: Macronutrient composition of selected products²

Even the WHO Background paper for the Joint FAO/WHO 2005 Workshop on fruit and vegetable for health states that 100% fruit juices should be considered as fruit.³ The WHO and FAO recommend a minimum of 400g of fruit and vegetables per day for the prevention of

¹ As per Directive 2012/12/EU no fruit juices contain added sugars

² ANSES. 2012. French food composition table - Table Ciqual 2012. [ONLINE] Available at: <http://www.afssa.fr/TableCIQUAL/>. [Accessed 11 August 15]

³Antonio Agudo, MD, MSc, PhD, Unit of Emidemiology, Catalan Institute of Oncology (ICO), Spain, Measuring intake of fruit or vegetables, WHO Background paper, 2005, p.25

chronic diseases, as well as for the prevention and alleviation of several micronutrient deficiencies⁴. When translating these recommendations into policy, many countries worldwide adopted 5 A DAY programmes to promote the consumption of fruits and vegetables. As an example, the UK Government agency Public Health England considers that one 150ml glass of unsweetened 100% fruit or vegetable juice counts as one portion of the 5 a day⁵. In addition, an article by Shenoy et al⁶ on a randomized control trial demonstrates the potential of a commercial vegetable juice as a practical means to increase vegetable intake. The conclusion is that consumption of vegetable juice helps to reach the dietary guideline recommendations, without affecting other health parameters, on the contrary.

The 'Pan American Health Organisation Nutrient Profile Model'⁷ published in February 2016, clearly stated that *"Collectively, the evidence supports the need to protect and support the consumption of unprocessed and minimally processed foods."* In their Model - under Panel B - they specifically classify foods that should not be classified, or in other words should be exempt from Nutrient Profiling, and under *"Unprocessed or minimally processed foods": 'fresh or pasteurized fruit juices without added sugars'* are listed as such. This is based on the original NOVA classification system developed by Professor Carlos Monteiro (Sao Paulo University), which stands up to all other classification systems, including European ones, and is valid for both developed and developing regions/countries - used in the Pan American Health Organisation recommendations.

In recent years, controversy around the consumption of 100% fruit juice has arisen for its potential adverse impact on weight. However, a systematic review evaluating associations between intake of 100% fruit juice and weight/adiposity and nutrient intake/adequacy among children, 1 to 18 years of age, showed that the available evidence did not support an association between 100% fruit juice consumption and weight/adiposity in children after controlling for energy intake⁸. The authors also mention that some studies suggest that children consuming 100% fruit juice have higher intake and adequacy of dietary fiber, vitamin C, magnesium, and potassium and conclude that *"in context of a healthy dietary pattern, evidence suggests that consumption of 100% fruit juice may provide beneficial nutrients without contributing to pediatric obesity."*

Another study from the US, showed that children who consumed some form of apple products (including whole apples, apple sauce, and 100 % apple juice) had higher Healthy Eating Index scores than non-consumers and were less likely to be obese than non-consumers⁹. In this sample of children, consuming any form of apples made an important contribution to try and meet the fruit recommendation.

A very recent study by Francou et al.¹⁰ explored fruit and vegetable juice consumption patterns in relation to dietary nutrient density among French children (aged 3 – 14 years old) and adults (

⁴ WHO/FAO. 2003. *Diet, nutrition and the prevention of chronic diseases Report of the joint WHO/FAO expert consultation*. WHO Technical Report Series, No. 916 [ONLINE] Available at: <http://www.who.int/dietphysicalactivity/publications/trs916/download/en/>. [Accessed 11 August 15].

⁵ NHS (UK). 2013. *5 A DAY: what counts?*. [ONLINE] Available at: <http://www.nhs.uk/Livewell/5ADAY/Pages/Whatcounts.aspx>. [Accessed 11 August 15].

⁶ Shenoy et al, *The use of a commercial vegetable juice as a practical means to increase vegetable intake: a randomized control trial*, Nutrition Journal 2010, 9:38

⁷ <http://iris.paho.org/xmlui/handle/123456789/18621>

⁸ Crowe-White K, O'Neil CE, Parrott JS, Benson-Davies S, Droke E, Gutschall M, Stote KS, Wolfram T, Ziegler P., 2015. Impact of 100% Fruit Juice Consumption on Diet and Weight Status of Children: An Evidence-based Review. *Critical Reviews in Food Science and Nutrition* [Online]. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/26091353> [Accessed 11 August 2015].

⁹ O'Neil CE, Nicklas TA, Fulgoni VL, 2015. Consumption of apples is associated with a better diet quality and reduced risk of obesity in children: National Health and Nutrition Examination Survey (NHANES) 2003–2010. *Nutrition Journal*, [Online]. 14:48. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4443546/pdf/12937_2015_Article_40.pdf [Accessed 11 August 2015].

¹⁰ Francou, Hebel, Braesco, Drewnowski, *Consumption Patterns of Fruit and Vegetable Juices and Dietary Nutrient Density among French Children and Adults*, Nutrients 2015, 7, 6073-6087

≥ 21 years old). The study concluded that higher fruit and vegetable juice consumption was associated with higher-quality diets and better compliance with the French National Plan for Nutrition and Health.

When looking at obesity, a study of the relationship between fruit juice intake and obesity, based on 7,500 children aged 2 – 18 years concluded that the ‘findings are consistent with many other research projects that have found no association between consumption of 100% juice and obesity’. In addition, the authors found that children who drank 100% fruit juice had healthier overall diets than non-juice consumers, and had significantly lower intakes of total fat, saturated fat and sodium.¹¹

In terms of diabetes, research has found that in the context of blood glucose levels, consuming whole fruit and fruit juice is comparable. Glycaemic index levels of juices are typically low, and comparable to that of the fruits from which they are made.¹²

Finally, it should not be neglected that consumption of fruit and vegetable juices in Europe has been declining over the years and in 2014 it averaged only 34 ml per capita per day¹³ - a very small percentage of the total daily values within the European population.

¹¹ Fulgoni III, V.L. Fulgoni, S.A. and Taylor S.K, (2006) Consumption of 100% juices is not associated with being overweight or risk for being overweight in children. Program/Abstract # 139.5 in the Experimental Biology meeting, San Francisco April 1st – 5th

¹² Data published in the American Journal of Clinical Nutrition has shown that GI (glycemic index) levels of juices are typically low, and comparable to that of the fruits in which they are made (Source: Foster-Powell, K., Holt, S. & Brand-Miller, J. (2002) International table of glycemic index and glycemic load values: 2002. The American Journal of Clinical Nutrition, 76, pp. 5-56)

¹³ AIJN. 2015. Liquid Fruit Market Report. [ONLINE] Available at: <http://www.aijn.org/files/default/aijn2015-report.pdf>