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20<sup>th</sup> June 2019

Dear Professor Casimir,

We are writing to you regarding your report *Régimes végétariens et végétaliens administrés aux enfants et adolescents*, and the press release that was published on 14<sup>th</sup> May 2019.

We are very worried about the conclusions of your report and how they have been reported in the media. We understand your concerns about the health of vegan children. We agree with you that it is important to support vegan parents and not judge them. However we have seen these days headlines calling for vegan parents to be arrested or prosecuted. Criminalising vegan parents can lead to them not telling their doctors that they are vegan, missing the opportunity to receive adequate nutritional advice. In extreme cases, if parents feel judged and harassed, they might stop attending medical appointments, which could have adverse consequences on their child's health. In most of the published case reports on adverse effects of vegan diets in children, the common denominator was the lack of medical care the child was receiving. Those parents were following wrong nutritional advice, in many cases from unlicensed health professionals. We believe we should do our best to prevent these situations.

The position of the most important dietetic associations is that a well-planned vegan diet is perfectly adequate for all ages, including infants, children and adolescents and during pregnancy and breastfeeding, and may provide health benefits for the prevention and treatment of chronic diseases.<sup>1-3</sup> We have been counselling vegan parents for many years and we can say confidently that these children are healthy and thriving, and that educating vegan parents on how to plan well-balanced diets for their children is feasible and easy.

We would like to comment in more detail about some of the statements in your report:

Page 4. If vegan diets are followed without strict monitoring and several supplements (to compensate for the inherent deficiencies associated with this diet) they can be particularly dangerous, especially for foetuses, infants, young children and adolescents, due to their specific requirements during growth. For very small children in particular, and unborn babies,

(and therefore for pregnant and lactating women), for whom a balanced diet is an absolute necessity, the vegan diet must be formally prohibited.

This statement is not supported by any reference to research studies and is in disagreement with the position of the most important dietetic associations in the world: the Academy of Nutrition and Dietetics (US),<sup>1</sup> the British Dietetic Association<sup>2</sup> and the Dietitians of Canada association.<sup>3</sup> We think it would be important that you explained why your position is so different from that of these associations.

Page 4. Deficiencies: High-quality protein, vitamin B12, vitamin D, calcium, iron, zinc, iodine and DHA are the most commonly seen deficiencies in unsupplemented vegan diets, especially in the absence of strict monitoring. Lack of vitamin B12 can be dangerous and supplementation is usually required, especially to prevent anaemia.

We agree that vitamin B12 deficiency can be dangerous, but this situation is easily avoidable. Oral supplements are cheap, easy to obtain and to take (they can be taken once a week) and are free from animal ingredients and therefore accepted by vegans. Many foods are fortified with B12, and they are becoming a good source of this vitamin. Children and adults who take B12 supplements regularly have normal blood levels and do not show signs of deficiency.<sup>4,5</sup> They might be even more protected against B12 deficiency, as malabsorption of B12 from unfortified foods is quite common, especially among older people. That is why the US National Institutes of Health “recommend that adults older than 50 years obtain most of their vitamin B12 from vitamin supplements or fortified foods”.<sup>6</sup>

B12 should never be a problem if people are well-informed. Our duty as health professionals should be to ensure that our patients have all the information they need to be healthy, while respecting their beliefs.

You do not provide any reference showing that vegan diets in children lead to nutritional deficiencies more often than non-vegan diets. It is very likely that the diets of some vegan children are suboptimal. But the same could be said of non-vegan children. Vitamin D, calcium, iron, zinc, and iodine are the most commonly seen deficiencies in unsupplemented non-vegan diets. Non-vegan diets in childhood are usually deficient in other micronutrients as well, like folate, vitamin E and fibre. Data from a large cohort of children (0-8 years) from five European countries participating in a prospective observational trial as part of the EU Childhood Obesity Project have shown that the diet of non-vegan European children was deficient in iron, calcium, vitamin D, folate, iodine and zinc. From 2 years onwards less than 40% of children had adequate intakes of iodine and folate (at 8 years only 5.8% of children were taking the recommended amount of folate) and less than 3% had adequate intakes of vitamin D. Diets were iron-deficient in 60% of 8-year old children.<sup>7</sup> Other studies have reported similar findings, including suboptimal intakes of vitamin E.<sup>8</sup> Fibre intakes of European children are lower than the recommendation at all ages.<sup>9</sup>

The consequences of this are already reflected on several health indicators. According to the WHO *Nutrition, Physical Activity and Obesity* report on Belgium (2013), among 6-year-olds,

19.3% of boys and 18.4% of girls were overweight and 6.0% and 5.1% were obese. The corresponding figures for 9-year-olds were 27.4% and 27.1% for overweight and 10.9% and 8.9% for obesity, for boys and girls respectively.<sup>10</sup> The risks associated with overweight during childhood and adolescence are well known: high blood pressure, type 2 diabetes, asthma and sleep apnoea, and liver disease, apart from significant psychological and emotional problems.<sup>11</sup> Up to 30-60% of obese adolescents have combined dyslipemia and many will need to be treated with statins and other drugs.<sup>12</sup> We think that this situation is alarming and that reflects our failure to promote healthy lifestyles since early childhood.

Page 4. Moreover, the correct distribution of the different plant food groups (cereals, legumes, nuts and seeds, fruits and vegetables) in order to cover the needs of a certain number of trace elements and nutrients is absolutely essential...

All dietary patterns, regardless of their name, should be well planned in order to avoid nutritional imbalance. This is not exclusive of vegan diets, but is the basis of all nutritional guidelines, from the first eating pyramids developed in the 1970s to the more recent *eating plates*. The Healthy Eating Plate was created by nutrition experts at Harvard School of Public Health in 2012 as a guide for creating balanced meals by showing the proportion of each food group that should be included in our daily diet.<sup>13</sup> Many governments have developed their own eating guidelines based on the same principles. Some examples are the ChooseMyPlate guide (US, 2011 & 2015)<sup>14</sup>, the Eatwell Guide (UK, 2016)<sup>15</sup> and the Canada's Food Guide (Canada, 2019).<sup>16</sup> All these guidelines also show alternatives to animal products for vegetarians and vegans.

A well planned vegan diet, in which all plant food groups are included, and are distributed following the same principles as in the *eating plates*, has been shown to provide at least 90% of the Dietary Reference Intakes of protein, iron, zinc, calcium, and n-3 fatty acids for children from 1 to 18 years.<sup>17</sup>

Page 4 ...particularly for the calcium present for example in cabbage, sesame seeds or almonds, and omega-3 fatty acids, found in nuts, rapeseed or soya beans.

These are some plant-based sources of two nutrients: calcium and omega-3 fatty acids. These foods are easy to find and to include in the diet and in fact are frequently consumed by vegans of all ages. In addition to providing calcium and omega-3 fatty acids they provide several other nutrients and antioxidants, and have been associated with a decreased risk of developing chronic diseases.<sup>18,19</sup>

We believe that our mission as health professionals should be to ensure that people know what the main sources of nutrients are and how to include them in their diets regularly.

Page 4. It is important to ensure the intake of complementary proteins to obtain enough essential amino acids (lysine is the limiting amino acid in cereals and nuts, and methionine is the limiting amino acid in legumes).

The concepts of *limiting amino acid* and *complementary proteins* are outdated. It was established more than three decades ago that plant proteins can completely provide for human amino acid needs at all ages as long as the caloric intake is high enough to meet energy requirements.<sup>20</sup> The main medical and dietetic associations have repeatedly stated that all plant foods contain all essential and non-essential amino acids and that there is no need to combine different food groups in order to get a “high-quality protein”.<sup>1,21</sup>

In any case grains, legumes, and nuts and seeds constitute the basis of vegan diets and are consumed daily by vegans since the age of 6 months. It is difficult to imagine a vegan diet without these three food groups. They are cheap and easily available and there is no reason why anyone would avoid them.

Page 5. There is also a risk of excess fibre (phytates) due to high consumption of legumes and cereals, fruits and vegetables that may interfere with digestive absorption of minerals and iron.

In recent years our understanding about the role of fibre in human diet has significantly changed. Contrary to the old belief that fibre impedes the absorption of nutrients, it has been shown that fibre is essential for the health of our gut microbiome, which plays an important role in the digestion of food and the absorption of micronutrients. Gut bacteria facilitate the synthesis of several vitamins (thiamin, folate, biotin, riboflavin, pantothenic acid, vitamin K) and short chain fatty acids; it also helps to digest and absorb proteins and plant polyphenols.<sup>22</sup>

As we have mentioned before, average fibre intake in children and adults across Europe does not reach the recommended amounts. This is worrying, as high fibre intakes have been consistently associated with a decreased risk of all-cause mortality, cardiovascular disease, diverticular disease, colorectal cancer and breast cancer.<sup>9</sup>

Phytates can interfere with mineral absorption only if they are present in very large quantities, which typically happens in very monotonous diets based on a few varieties of cereals, roots and tubers that are also low in fruit and vegetables, as the inhibitory effect of phytates on minerals can be counteracted by many components found in fruit and vegetables, especially ascorbic acid (vitamin C), citric acid and other organic acids. This should not be a problem in vegan diets consumed in Western countries. Additionally phytates can be reduced by using common cooking techniques like soaking, germination, malting and fermentation.<sup>23</sup>

Page 5. Some people also supplement with algae potentially contaminated with heavy metals (arsenic, mercury).

Seaweeds have been part of traditional diets all over the world; they are not consumed only by vegans. Unfortunately, as a result of human activity, some species (especially hijiki) may contain high levels of arsenic and other heavy metals, but the majority of seaweeds usually consumed by humans do not have dangerous levels of these substances.<sup>24,25</sup> Contamination of food with heavy metals is not a problem limited to seaweeds. For example, fish is the main source of dietary methyl-mercury, and liver and kidney from game are the main source of dietary lead.<sup>26</sup> In one coastal region in Spain, near 70% of breastfeeding women presented hair levels of mercury above the USA Environmental Protection Agency internal exposure guideline of 1 µg/g, and 27% exceeded the European Food Safety Authority health-based guidance value of 1.9 µg/g. Age, smoking and fish consumption were the major predictors of mercury in hair.<sup>27</sup> High amounts of arsenic can be found in many foods as a consequence of the increased use of pesticides, herbicides and phosphate fertilizers in agriculture, as well as the increase in industrial waste. Rice is one of the foods most contaminated with arsenic, followed by other grains, drinking water and sea products. High levels of arsenic have been correlated with fish consumption in south Europe.<sup>28</sup>

In summary contamination of the food chain with heavy metals is a real concern, but not only for vegans. In fact some studies suggest that the milk of vegetarian and vegan mothers have fewer pollutants and a more favourable lipid profile than the milk of non-vegetarian women.  
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Page 5. A vegan diet systematically leads to imbalances (9-12).

This statement, and the paragraph that follows, is based on three case reports.

In the hierarchy of medical evidence case reports rank very low and are often regarded as anecdotes. Case reports can be useful to identify rare reactions and new conditions, and to generate hypothesis that can be tested in larger studies; but the findings of a single case report cannot be generalised.<sup>32</sup> We do not think it is accurate to state, based on three case reports only, that a vegan diet “systematically” causes imbalances.

Page 5. Vegan diets excluding all forms of animal protein (and therefore several essential amino acids) systematically require supplementation as well as an accurate analysis of the food consumed to ensure the best possible nutritional balance.

All essential and non-essential amino acids are present in plant foods. Humans do not need animal protein in order to get our amino acids requirements.<sup>20,21</sup>

Page 5. If this situation can be managed in adults through a diversification of food sources, it becomes more problematic in infants whose diet is exclusively milk up to 4 to 6 months.

All infants are fed breast and/or formula milk in the first 4-6 months of life, irrespective of whether their families are vegan or not. Breastmilk is the ideal way of feeding babies and provides all nutrients an infant needs, except vitamin D. Breast milk does not contain an adequate amount of vitamin D, regardless mother's diet, even if mothers are taking supplements. The American Academy of Pediatrics and many other paediatric associations worldwide recommend breastfed infants are supplemented with 400 IU per day of vitamin D.  
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Vegan women who cannot or do not wish to breastfeed, may use infant formula based on soya-protein or hydrolysed rice protein. These formulas complied with the requirements established by the current legislation of the European Commission Directive.<sup>34</sup>

Page 5. Blood tests carried out throughout the year, along with clinical assessments, allow to ensure a correct nutritional status and a metabolic balance.

All children need regular clinical reviews by health professionals, not only vegan children. If a vegan child who is taking B12 supplements regularly is thriving and has no health problems, there is no medical justification for routine blood tests. We have not found any study showing the benefits of this strategy.

Page 5. Several cases of intestinal obstruction on plant bezoars have also been reported in children with strict vegan diet.

This is not accurate. Only one case has been reported, and the child was not on a vegan diet, but on a raw vegan diet, which is not the same. A raw diet (vegan or not) is not recommended for infants and young children. The child was eating almost exclusively raw lentils, peas, beans and carrots.<sup>35</sup> That was not a well-balanced diet.

Page 5-6. It is not medically recommended, and it should be prohibited to feed a child, especially during periods of rapid growth, with a potentially destabilizing diet, a diet that requires supplements and frequent clinical and blood tests. A dietary pattern that requires systematic supplementation and mandatory blood tests (along with systematic medical reviews by general doctors or paediatricians) in order to exclude deficiencies is not a diet but a form of "treatment" that is not ethical to impose on children.

There is no evidence that a vegan diet is potentially more destabilizing than a non-vegan diet. All diets for children should be planned with attention. All children should have regular reviews with their general doctors and/or paediatricians to monitor their growth, health and development. We do not think it is justified to subject children to routine blood tests in the absence of a clinical indication. A vegan child who is growing and developing well and is eating

a well-balanced vegan diet supplemented with vitamin B12 does not need any more medical investigations than any other children.

All diets require systematic supplementation. There are no “natural diets” that provide humans with all the nutrients we need. In conventional, non-vegan diets, many foods are fortified during manufacturing and processing, so consumers do not see, and in most cases are not aware, that they are taking supplements.

Iodine is an example of a nutrient that needs to be supplemented. Without food fortification most populations in the world would be iodine deficient. The World Health Organization (WHO) recommends salt iodization as the best strategy to prevent iodine deficiency disorders.<sup>36</sup> Some countries (UK, Spain) are using dairy products as a vehicle for iodine. Dairy is not naturally rich in iodine, but cows’ feed is supplemented with this micronutrient. Urinary iodine levels in a population sample are regularly measured to adjust the concentration of iodine on animal feed. Other countries, like Belgium, have chosen a different strategy to deliver iodine to their citizens: fortifying bread with iodized salt.<sup>37</sup>

Other examples of nutrients that have been routinely added to common foods are: calcium (dairy products), vitamin D (margarine, dairy products, cereals), folate (flour), iron (breakfast cereals), DHA (eggs). The use of folate supplements by women around the periconceptual period has been essential in the reduction of the prevalence of neural tube defects worldwide. All breastfed babies need to take vitamin D supplements during their first year of life as human milk does not provide enough and sun exposure at that early age would be dangerous. Livestock feed is also routinely fortified with the nutrients we wish to appear in their meat.

Because vegans are still a minority of the population, their specific needs have been neglected and seen as a sign that vegan diets are “intrinsically deficient”, but they are not more deficient than other dietary pattern, they are just different.

Page 6. Several articles have shown that following a vegan diet during pregnancy and breastfeeding could lead to growth retardation, megaloblastic anaemia and psychomotor developmental delay in the infant, but also deficits in iron, zinc, calcium, vitamin D or omega-3-fatty acids.

We have not found studies showing that vegan children have more nutritional deficiencies than non-vegan children, and the only references included in your report are case reports. As we have said before micronutrient deficiencies are quite common among children living in Europe.<sup>7,8</sup>

Page 6. Neurological disorders can be as severe as respiratory disorders and a coma. These cases occur mainly when people were not informed of the need for adequate supplementation.

Vegan children and adults who do not supplement with vitamin B12 will develop deficiency sooner or later, and deficiency includes neurological damage. As we said before, this is a completely avoidable situation and nobody should be at risk of having vitamin B12 deficiency when there are so many oral supplements available.

It would be very useful if health professionals informed their vegan families about adequate B12 supplementation for babies, children and pregnant and breastfeeding women in order to prevent these tragic situations.

Page 7. According to several studies infant formulas based on soya protein are safe for feeding infants, but are not completely vegan (they are fortified with vitamin D). There are also hydrolysed rice-based formulas, which have been shown to be safe for infants with allergy to cow's milk protein.

Most soya-based and hydrolysed rice-based formulas contain vitamin D from animal origin, but some brands have started replacing animal-based vitamin D3 with plant-based vitamin D3, obtained from lichen. Vegan families are happy to use these plant-based formulas if they know they are available.

Page 7. We are also concerned about the definition of certain foods. Thus plant-based beverages (soy beverage, almond, rice milk, etc.) are often referred to as "milks" rather than "juices". This often creates confusion in the public and sometimes even physicians, about the composition of these foods and the possibility of using them as infant formula... It would be appropriate to allow to sell them only under the name of "plant juice", with the warning "not suitable for infant feeding" even though these juices have been specifically fortified and modified to look like milk.

People use the term milk because these drinks are normally used in coffee, desserts etc in the same way as cow's milk. We agree that only soya-based and hydrolysed rice-based formulas are appropriate for feeding babies. Well-informed vegan families would never use other products to feed their infants.

We believe that everyone has the right to live, and in the case of parents to raise their children, according to their beliefs. Veganism is a protected belief under the European Convention on Human Rights (article 9: Freedom of thought, conscience and religion).<sup>38</sup> Vegan parents have the same right to receive professional and up-to-date nutritional advice as any other citizen. The American Academy of Nutrition, on its most recent position statement on vegetarian and vegan diets (2016) reminds us that we, as health professionals, "have ethical

obligations to respect vegetarian dietary patterns as we would do with any other dietary pattern".<sup>1</sup>

We think it would be very useful for vegan families living in Belgium to have a list of doctors and nutritionists with experience in vegan nutrition, in case they need counselling. If vegan parents feel supported by the health system and receive up-to-date nutritional advice it will be much less likely that cases of deficiencies or nutritional imbalances occur.

A protocol on vegan nutrition in childhood for health professionals would also be very helpful and would send a much more positive and constructive message than the current report from the Académie de Médecine, and we kindly ask you to consider it. Of course, given our experience in this area, it would be a pleasure for us to collaborate with you on this.

Sincerely,

Dr. Miriam Martinez-Biarge, Consultant Paediatrician

On behalf of Plant-Based Health Professionals UK.

Plant-Based Health Professionals UK Ltd is a non-profit organisation committed to educate health professionals, members of the public and policy makers on the benefits of whole food plant-based nutrition in preventing and treating chronic diseases. Founder and Director is Dr. Shireen Kassam, Consultant Haematologist. Members of the Advisory Board are: Dr. Josh Cullimore, General Practitioner and Masters in Public Health; Dr. Alan Desmond, Consultant Gastroenterologist; Kate Dunbar, Teacher and Patient Advocate; Dr. Sue Kenneally, General Practitioner and Nutritionist; Doug Bristor, ICT expert; Marta Lewandowska, medical student; Rosie Martin, Registered Dietician; Dr. Miriam Martinez-Biarge, Consultant Paediatrician; Dr. Gemma Newman, Family Doctor and Plant-Based Nutrition specialist; Dr. Mahesh Shah, General Practitioner; Iida van der Byl-Knoefel, Patient Advocate; Dr. Luke Vano, Psychiatry trainee and Plant-Based Nutrition specialist; and Dr. Leila Dehghan, specialist in Clinical and Public Health Nutrition. Our International Advisory Board members are Dr. David Jenkins, Professor of Nutritional Sciences at the University of Toronto and Dr. Kim Williams, Professor of Medicine and Cardiology at Rush University Medical Center, US, and former President of the American College of Cardiology (2015- 2016).

In addition, the following Health Professionals have signed and support this letter:

Dr. Maria E. Theodorou, MD PhD FRCPC  
Dr. Zahra Kassam MBBS, MSc, FRCR (Radiation Oncologist)  
Dr. Peter Mills Ellis (Neurosurgeon)  
Dr. Jennifer Purdy, CD, MD, CCFP, DipABLM  
Lauren McNeill, RD, MPH (Registered Dietitian, Masters of Public Health)  
Dr. Areli K Cuevas-Ocampo (Consultant Neuropathologist)  
Dr. Gloria Barone (Consultant Medical Oncologist)  
Dr. Giuditta Sanna  
Dr. Dev Priya Singhvi (SpR Paediatrics)  
Dr. Katharine Cartwright (Infectious Diseases Consultant)  
Dr. Rebecca Ellen Jones (General Practitioner)  
Dr. Yoginee Gokool (Specialty Doctor, Obstetrics/Gynaecology)  
Dr. Hannah Short (Menopause and PMS specialist)  
Dr. Ana Alcalde (Paediatric Endocrinologist)

Dr. Francisco David Muñoz Araújo, (General Practitioner)  
Louisa Aubry Khwaja (Parkinson's Nurse Specialist)  
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Dr. Roghieh Dehghan-Zaklaki, MD, MRCGP  
Dr Margaret Ikpoh (General Practitioner)  
Dr Miriam Maisel (General Practitioner)

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