

University of Groningen

Response Letter to

Jong, Margriet F.C.de; van Hamersvelt, Henk W.; Lely, A. Titia

Published in:
Kidney International Reports

DOI:
[10.1016/j.ekir.2023.01.025](https://doi.org/10.1016/j.ekir.2023.01.025)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2023

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Jong, M. F. C. D., van Hamersvelt, H. W., & Lely, A. T. (2023). Response Letter to: Pregnancy, Healthy Eating, and CKD: "Eat Food, Not Too Much, Mainly Plants," by Piccoli et al. (KIR-01-23-0003). *Kidney International Reports*, 8(4), 945-946. <https://doi.org/10.1016/j.ekir.2023.01.025>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

food is formulated to be palatable or hyperpalatable; maintain flavor, texture, attractive color, long shelf-life; and is obtained using sophisticated industrial processes, typically resulting in energy-dense products, with added sugar, unhealthy fats, and food additives (potassium, sodium, phosphate, and chemical substances) that can also trigger addictive eating behaviors. Data on the deleterious effects of additives and contaminants are accumulating for the overall population and it is reasonable to consider that they may be even more dangerous in CKD patients.^{4,5} Therefore, we suggest that dietary advice in CKD pregnancy should also focus on avoiding (ultra)processed and preserved food, regardless of its plant-based or animal-based origin, thus exploiting the opportunity to improve long-term health through nutritional education in pregnancy.⁵

Therefore, the mantra of the bestselling author Michael Pollan “Eat food. Not too much. Mostly plants” can be adapted for pregnant CKD patients as follows: eat food, underlining that what has been excessively processed is no longer “food”; not too much, to limit weight gain, a risk factor of adverse pregnancy outcomes; mostly plants, wisely, however, flexibly, preferring plant-based diets.

ACKNOWLEDGMENTS

Editing fee was provided by the Centre Hospitalier Le Mans.

1. de Jong MFC, van Hamersvelt HK, van Empel I, Nijkamp EJV, Lely TA, on behalf of the Dutch Guideline Working Group on Pregnancy in CKD. Summary of the Dutch Practice Guideline on pregnancy wish and pregnancy in CKD. *Kidney Int Rep.* 2022;12:2575–2588.
2. Attini R, Leone F, Chatrenet A, et al. Plant-based diets improve maternal-fetal outcomes in CKD pregnancies. *Nutrients.* 2022;14:4203. <https://doi.org/10.3390/nu14194203>
3. Walser M, LaFrance ND, Ward L, VanDuyn MA. Progression of chronic renal failure in patients given ketoacids following amino acids. *Kidney Int.* 1987;32:123–128. <https://doi.org/10.1038/ki.1987.181>
4. Cai Q, Duan MJ, Dekker LH, et al. Ultraprocessed food consumption and kidney function decline in a population-based cohort in the Netherlands. *Am J Clin Nutr.* 2022;116:263–273. <https://doi.org/10.1093/ajcn/nqac073>
5. Orozco-Guillien AO, Muñoz-Manrique C, Reyes-López MA, et al. Quality or quantity of proteins in the diet for CKD patients: does “junk food” make a difference? Lessons from a high-risk pregnancy. *Kidney Blood Press Res.* 2021;46:1–10. <https://doi.org/10.1159/000511539>

Giorgina Barbara Piccoli¹, Carla Maria Avesani², Filomena Leone³ and Rossella Attini³

¹Nephrologie, Centre Hospitalier Le Mans, Le Mans, France;

²Karolinska Institutet - Huddinge Campus, Stockholm Sweden;

and ³Ostetricia, Dipartimento di Chirurgia, Università di Torino, Italy

Correspondence: Giorgina Barbara Piccoli, Nephrologie, Centre Hospitalier Le Mans, Avenue Roubillard 194, Le Mans 72000, France. E-mail: gpiccoli@yahoo.it

Received 3 January 2023; accepted 9 January 2023; published online 26 January 2023

Kidney Int Rep (2023) 8, 945; <https://doi.org/10.1016/j.ekir.2023.01.023>

© 2023 International Society of Nephrology. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Response Letter to: Pregnancy, Healthy Eating, and CKD: “Eat Food, Not Too Much, Mainly Plants,” by Piccoli *et al.* (KIR-01-23-0003)



The Author Replies: We thank colleagues Piccoli *et al.* for their kind comments on our national guidelines on Pregnancy Wish and Pregnancy in chronic kidney disease (CKD).¹ We agree with their advice for pregnant patients with more advanced stages of CKD to use a moderately protein-restricted, preferably plant-based diet and, if indicated, a very low protein diet supplemented with a mixture of 3 essential amino acids and the nitrogen-free hydroxyl analogs and keto analogs of 6 other essential amino acids to reduce the generation of blood urea nitrogen and other potentially toxic metabolites² and probably also prevent glomerular hyperfiltration. Unfortunately, we agree that there is scarce evidence on this subject in this group of patients. Dietary studies with relevant endpoints will be a great challenge in this small population. Therefore, pragmatic recommendations are needed on this topic and we will have to wait for more evidence on, among others, the choice of keto analogs or essential amino acids that are important for fetal health. Interestingly, in a recent meta-analysis across species on the topic of amino acids and fetal growth (outside CKD in healthy and diseased pregnancies), Terstappen *et al.*³ showed that arginine and (N-Carbamyl) glutamate improve fetal growth (most likely via promoting placental health). As

also suggested, we consider integrating food choice in the following version of our guidelines an interesting recommendation because recently it was shown that higher consumption of ultraprocessed food was associated with rapid ($\geq 30\%$) decline in estimated glomerular filtration rate relative to baseline.⁴ Therefore, it seems an easy improvement in the treatment of pregnant women with CKD to pay more attention to food quality during their pregnancy. Moreover, plant-based diets can satisfy the nutritional requirements in all stages of human life and contributes to human health and ultimately to the health of the planet.⁵¹ In conclusion, we agree to consider to advise focusing on a healthy diet with fresh products to women with CKD and a pregnancy wish and during pregnancy.

SUPPLEMENTARY MATERIAL

[Supplementary File \(PDF\)](#)

Supplementary References.

- de Jong MFC, van Hamersvelt HW, van Empel IWH, Nijkamp EJV, Lely AT. Dutch Guideline Working Group on Pregnancy in CKD. Summary of the Dutch practice guideline on pregnancy wish and pregnancy in CKD. *Kidney Int Rep.* 2022;7:2575–2588. <https://doi.org/10.1016/j.ekir.2022.09.029>
- Shah AP, Kalantar-Zadeh K, Kopple JD. Is there a role for ketoacid supplements in the management of CKD? *Am J Kidney Dis.* 2015;65:659–673. <https://doi.org/10.1053/j.ajkd.2014.09.029>
- Terstappen F, Tol AJC, Gremmels H, et al. Prenatal amino acid supplementation to improve fetal growth: a systematic review and meta-analysis. *Nutrients.* 2020;12:2535. <https://doi.org/10.3390/nu12092535>
- Cai Q, Duan MJ, Dekker LH, et al. Ultraprocessed food consumption and kidney function decline in a population-based cohort in the Netherlands. *Am J Clin Nutr.* 2022;116:263–273. <https://doi.org/10.1093/ajcn/nqac073>

Margriet F.C. de Jong¹, Henk W. van Hamersvelt² and A. Titia Lely³

¹Department of Internal Medicine, Division of Nephrology, University Medical Center Groningen, Groningen, The Netherlands; ²Department of Nephrology, Radboud Medical Center, Nijmegen, The Netherlands; and ³Department of Gynecology and Obstetrics, University Medical Center Utrecht, Utrecht, The Netherlands

Correspondence: Margriet F.C. de Jong, Department of Internal Medicine, Division of Nephrology, University Medical Center Groningen, Hanzeplein 1, 9713 GZ Groningen, The Netherlands. E-mail: m.f.c.de.jong@umcg.nl

Received 18 January 2023; accepted 20 January 2023; published online 28 January 2023

Kidney Int Rep (2023) **8**, 945–946; <https://doi.org/10.1016/j.ekir.2023.01.025>

© 2023 International Society of Nephrology. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).