# Article information:

Prolonging healthy aging: Longevity vitamins and proteins | PNAS  
<https://www.pnas.org/doi/10.1073/pnas.1809045115>

# Article summary:

1. Proteins/enzymes can be classified into two classes according to their essentiality for immediate survival/reproduction and their function in long-term health: survival proteins and longevity proteins.

2. Nutrients required for the function of longevity proteins constitute a class of vitamins that are here named “longevity vitamins”, including taurine, ergothioneine, pyrroloquinoline quinone (PQQ), queuine, lutein, zeaxanthin, lycopene, α- and β-carotene, β-cryptoxanthin, and astaxanthin.

3. Deficiencies in many of the known 30 vitamins and essential minerals/elements (V/M) plus 11 new putative vitamins can increase the risk of future disease and shorten lifespan; an optimal level of these V/M is necessary for promoting healthy aging.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article is written by Cynthia Kenyon from Calico Labs in San Francisco and was approved on September 13th 2018 after being received for review on May 30th 2018. The article provides evidence that deficiencies in many of the known 30 vitamins and essential minerals/elements (V/M) plus 11 new putative vitamins can increase the risk of future disease and shorten lifespan; an optimal level of these V/M is necessary for promoting healthy aging. The article provides a comprehensive overview of the evidence supporting this claim with references to clinical trials, epidemiology studies, Mendelian randomization studies as well as biochemical and medical literature.

The article does not appear to have any biases or one-sided reporting as it presents both sides equally with no promotional content or partiality towards any particular viewpoint. It also mentions potential risks associated with supplementation or improved diet which could reduce much of the consequent risk of chronic disease and premature aging.

The only potential issue with the article is that it does not explore any counterarguments or missing points of consideration which could provide further insight into its claims. However overall it appears to be a reliable source providing evidence based information about how deficiencies in certain nutrients can affect long term health outcomes such as increased risk of diseases associated with aging or shortened lifespan.

# Topics for further research:

* Vitamin and mineral supplementation risks
* Nutrient deficiencies and chronic disease
* Nutrient deficiencies and aging
* Nutrient deficiencies and lifespan
* Mendelian randomization studies
* Clinical trials on vitamin and mineral supplementation

# Report location:

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