

Peer Review

Review of: "Magnesium Deficiency Accelerates Aging and Shortens Healthspan"

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This review article aims at providing a comprehensive understanding and explanation as to why magnesium deficiency may have a major impact on aging and reduced health-span.

Major Comment:

While the majority of the information provided in the text of this review manuscript is correct in principle, what is missing in several points of the manuscript is the scientific support (i.e., the reference or references) for many of the reported points, which therefore read more as a personal opinion or statement without the necessary associated experimental or clinical evidence. A couple of examples: 1. In the introduction, the author indicates that potentially as many as 600 enzymes are directly or indirectly magnesium-dependent or magnesium-regulated. Which reference(s) support(s) this statement? A quick PubMed search supports more the idea that about 300 enzymes are magnesium-regulated or dependent. A second example: in describing figure 2, the author states that "...All forms of vitamin D (solar substrate, storage form, and active form)...require Mg." That is the reference the interested reader can consult for this specific point?

These are just two of the many points at which references are missed but actually needed to support the information provided (page 2, line 5; page 3, lines 6; page 3, line 2 of paragraph 3 (accelerating hormones?); page lines 11 and 12: the whole comment on GHRHR and IGF-1R being Mg-dependent needs appropriate references. And again, these are just some of the several points noted in the initial 3 pages.

I would strongly recommend the author revise the manuscript and insert all the supporting references at all the necessary points to drive home the message they want to convey to the reading audience.

Minor point:

What {m/800/} means when discussing GPCR? Unclear.

Fig. 1: It would have graphically benefited from an indication of which point(s) is(are) regulated by Mg. I understand it is in the text, but a graphic clarification would have gone a long way...

Declarations

Potential competing interests: No potential competing interests to declare.