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Vitamins in nutrition: a new era?

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Vitamins – the name of which was proposed exactly one century ago by a Polish biochemist, Casimir Funk – are enjoying a second (third? fourth?) life, both scientifically and commercially.

A few years ago we learned the disappointing results of randomised clinical trials of antioxidant vitamins (A, C and E) as potential reducers of cardiovascular and cancer risks and of the B_6, B_{12} and folate combination in homocysteine and cardiovascular risk control. Since then, however, new data has emerged that associates adequate intakes of vitamins with favourable health outcomes.

One notable example is that of vitamin K, whose essential role in skeletal development is now well established. In this issue of Nutra*foods*, Philipp and Ouwehand review the latest evidence in support of this notion.

Concerning cardiovascular risk, basic and clinical research are suggesting that elevated intakes of vitamin D might play protective roles. This is a very interesting hypothesis, because it might partially explain the North–South cardiovascular risk gradient (which, therefore, might also depend on sun exposure in addition to diet and lifestyle). Also, this theory opens interesting areas of investigation in the field of sunscreens, which are currently recommended to limit photoageing and reduce skin cancer risk. It must be stressed that international nutrition societies have rapidly examined the new evidence in support of the hypothesised cardioprotective role of vitamin D. Notably, data are not conclusive and further discussion is warranted before solid conclusions and recommendations can be formulated.

Very recently, two large intervention studies have been published on the chemo- and cardio-protective roles of a multivitamin formulation. While a modest effect on cancer incidence was reported, no influence of daily multivitamin intake was recorded on cardiovascular risk [1,2].

Another important field of application of vitamins concerns the possibility they allow to use health claims authorized by EFSA in a wide variety of applications. In fact, vitamins at low doses (15–30% of the RDA) allow producers to add interesting and attractive health claims to their products. Examples include vitamin B_6, which can be labelled as a "stimulant of the immune system"; vitamin C, which is allowed claims on protection from oxidative damage, normal collagen synthesis and nervous system function; vitamin B_2, active on the energetic metabolism; etc. Whether such claims are indeed scientifically correct in countries in which large segments of the population actually have adequate vitamin intakes is questionable; what is worth underscoring is that this "claim package" –

which represents more than 70% of the 222 approved by the EFSA – is not encouraging pharmaco-nutrition research. Companies that are investigating, e.g., probiotics (a process which is costly and methodologically complex) might wonder why they should do so when the addition of a small amount of vitamins to their products would allow them to display a conceptually similar claim.

In conclusion, recent literature attests the renewed interest in vitamins and their healthful roles and future research will certainly better clarify their precise role in human health. Their use in obtaining health claims should, perhaps, be reconsidered by regulators.

References

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