

## **Journal of the American Medical Association: ‘vitamin supplements kill you’ — how to massage the data to stop people taking vitamins**

**By the ANH team**

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On 28<sup>th</sup> February we saw headlines around the world once again condemning vitamin supplements. The stimulus? A Serbian doctor, Goran Bjelakovic, who was involved in an earlier canning job on vitamins – in 2004 on vitamin supplements for reducing risk of gastrointestinal cancers (*Lancet* 2004; 364: 1219–28) – somehow found himself doing it all over again. This time he published in the US-based *Journal of the American Medical Association (JAMA)*. On both occasions, his papers triggered headlines around the world which appeared to have just one purpose: getting people to stop taking vitamin supplements.

Interestingly, in a bout of apparent schizophrenia for *JAMA*, Bjelakovic and colleagues’ views are fundamentally opposed to those of Fairfield and Fletcher published in the same journal some two years earlier (*JAMA* 2002; 287:3116-3126). Fairfield and Fletcher broke the long-standing anti-supplement agenda of the *JAMA* by supporting supplementation as a means of reducing risk of key chronic diseases. But it seems it’s now back to business as usual for *JAMA*.

On the top of the Serbian’s hit list were the favourites: vitamin E and beta-carotene. Dr Bjelakovic, given his previous work, appears to have a bit of thing for antioxidant supplements which he considers to be beta-carotene, vitamin A, vitamin C, vitamin E and selenium. From the point of view of any informed scientist, this is a peculiarly narrow perspective on what is meant by ‘antioxidant supplements’. First of all the vitamins in question are not automatically antioxidants. In certain forms (especially as synthetic, isolated forms) and dosages, they can actually have the reverse effect – and act as pro-oxidants. Secondly, the dose and form of the vitamin are critical to determining how the vitamin will behave in the body, as are the other nutrients which are consumed at the same time.

To give an example, high doses of vitamin E (the very forms that have swayed Bjelakovic’s analysis) actually reduce the body’s absorption of the more important antioxidant form of vitamin E, gamma-tocopherol, the predominant form in foods and high quality vitamin E supplements.

It was seriously remiss of Bjelakovic and his team to not emphasise that; a) the studies they used to condemn these vitamins were nearly all performed using synthetic forms of the vitamins that behave in the body in

remarkably different ways to the natural forms and b) to not make clear the effects their study selection approach would have on the final results.

Looking further at this second, crucially important point, Bjelakovic's team found 815 trials that were potentially relevant. But they culled out a massive 747 (yes – a jumbo jet load!) of these trials, leaving just 8% of the total number for the number crunching! The most important reason given by the authors themselves for the exclusion of studies (responsible for 50% of the exclusions – a total of 405 trials) was “mortality was 0 in both study groups.”

Consider what effect this might have on bias. If you remove 50 % of the studies because they didn't cause any increased risk of death – how can you say that vitamin supplements overall cause a 5% increase in risk of death....it simply beggars belief that the *JAMA* can tolerate this type of science.

This is just one of the stunning problems with Bjelakovic's study. Dr Steve Hickey (of the ANH Expert Committee) and colleagues reveal more reasons for the flawed nature of the Bjelakovic's meta-analysis – click [here](#) to view their rebuttal submitted and approved for publication in the *Journal of Orthomolecular Medicine*.

Bjelakovic's specialty appears to be meta-analyses (statistical study of studies). The application of a lot of statistics to a given data set does not change the quality of the data set. In fact it can often magnify inherent problems in the data. Bjelakovic's data set is poorly selected and severely compromised – and the results of his analyses do not provide *any* reflection on the risk of supplementing with vitamin A, beta-carotene, vitamin C, vitamin E or selenium, the targets of the meta-analysis. In fact, the results tell you absolutely nothing about taking, either the natural forms of these supplements, or the effects of taking all these nutrients together, the common way they are taken by most people – as multivitamin/mineral supplements.

Newspaper headlines on 28 February were as dire as “Supplements ‘raise death rate by 5%’” (*The Times*, UK), “Vitamins ‘could shorten lifespan’” (BBC News, UK), “Des vitamines dangereuses pour la santé?” (*Le Soir*, France) and “Another knock on antioxidants” (*Los Angeles Times*, USA). But they may not have had the impact that was hoped for by certain interest groups. Judging by the vehement and often irrational hatred for vitamin supplements shown by elements of the orthodox medical profession closely aligned with the pharmaceutical industry, it seems likely that the main objective both of Bjelakovic's meta-analysis and the resultant articles was to stimulate a turn-around in the increasing numbers of people who are side-stepping pharmaceutical medicine in their quest for health.

Just like all the other factors Bjelakovic and his colleagues failed to consider, clarify or include in their meta-analysis, it seems that another important factor has been ignored. And that's the millions of people who have derived benefits from taking supplements, combined with other aspects of a healthy lifestyle. These people will need a little more than a computer-generated, reductionist, flawed analysis of past studies of pharmaceutical forms of vitamins to put

them off.

So will we.

**Links:**

Journal of the American Medical Association: <http://jama.ama-assn.org/cgi/content/abstract/297/8/842?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=Bjelakovic&searchid=1&FIRSTINDEX=0&resourceType=HWCIT>

Times online:

[http://www.timesonline.co.uk/tol/life\\_and\\_style/health/healthy\\_eating/article1449813.ece](http://www.timesonline.co.uk/tol/life_and_style/health/healthy_eating/article1449813.ece)

BBC News: <http://news.bbc.co.uk/1/hi/health/6399773.stm>

Scientific rebuttal by Dr Steve Hickey and colleagues: click [here](#).