

Last week I discussed the strengths and weaknesses of the Iowa Women's Health Study (Mursu et al, Archives of Internal Medicine, 171: 1625-1633, 2011) which has been interpreted as suggesting that multivitamins and certain individual vitamin or mineral supplements could actually increase the risk of mortality in older women.

This week I'd like to focus on the bottom line for you, and give you my personal recommendations.

1) As I mentioned last week the sample size for women taking a copper-only supplement was exceedingly small (108), so I do not have much confidence in the data reported for copper supplement users in this study.

However, high doses of copper can be toxic and there is no reason to be taking a stand-alone copper supplement unless it is recommended by your physician.

On the other hand, copper is an essential nutrient, so some copper should be included in your multivitamins. I recommend looking for multivitamins providing around 1 mg of copper (50% of the DV) on a daily basis.

2) The potential toxicity of iron in adult men and post-menopausal women is well documented. About 5-10% of these population groups have an increased need for iron that can be easily diagnosed by their physicians. There is another 10-15% that have a genetic condition that can lead to iron overload and premature death. This condition is insidious and is often not diagnosed until considerable damage has been done. For the rest of the people in these population groups iron offers neither a risk nor a benefit.

This is why the standard recommendation for adult men and post-menopausal women is to avoid iron supplements and iron-containing multivitamins unless supplemental iron is specifically recommended by their physicians.

To be quite clear, if you are an adult man or post- menopausal woman there is no reason to be taking an iron-containing supplement unless it has been recommended by your physician.

3) The potential toxicity of vitamin B6 and folic acid as stand-alone supplements in this study was quite small and was not seen in several previous studies.

However, as I pointed out last week there was no risk involved in taking a B complex supplement containing B6 and folic acid.

This reinforces a continuing theme of mine - namely that we should be focusing on a holistic, balanced approach to supplementation rather than relying on supplements providing individual, high potency nutrients.

4) Similarly, the potential toxicity of magnesium and zinc was also quite small, was seen only after considerable adjustment of the primary data, and has not been seen in several previous studies.

My recommendation would be to get both of these nutrients from a well-designed multivitamin supplement where all of the essential minerals are provided in the appropriate amounts and balance. If you do use magnesium and zinc as stand-alone supplements my recommendation would be to avoid very high doses of either unless directed by your physician.

5) The very slight increase in mortality associated with multivitamin use is not completely surprising because some previous studies have suggested this possibility.

As last week one needs to know why the participants were taking a multivitamin (ie, was it because they had a medical condition) to appropriately evaluate these data.

However, it is also important to ask how well designed and tested the multivitamin was. There are some multivitamins in the marketplace that are so poorly designed and/or manufactured that they could possibly cause more harm than good. Here are the questions that you should ask about the supplement that you are using:

- Does it represent a holistic approach to supplementation?

I have already talked about the value of having all of the B vitamins in balance rather than high dose B6 or folic acid alone. However, both pure alpha tocopherol alone (even all natural d-alpha tocopherol) or pure beta- carotene alone have the potential to cause some harm by interfering with the absorption of similar nutrients.

You should look for a supplement that provides all of the naturally occurring tocopherols and tocotrienols - especially gamma-, beta- and delta tocopherol rather than pure d-alpha-tocopherol alone.

You should also look for a supplement that provides all of the major carotenoids (beta-carotene, alpha- carotene, lycopene, lutein, and zeaxanthin) rather than beta-carotene alone.

And finally, a truly holistic supplement will contain omega-3 fatty acids, polyphenols and probiotics.

- Does the manufacturer do quality controls that guarantee the supplement does not contain contaminants that can harm you? Ask them how many quality controls they perform with the product that you are using.

- Can the supplement manufacturer provide you with clinical studies done with their product showing that it delivers the nutrients to your bloodstream and has the intended effect in your body? Animal and cell culture studies don't count.

- Are there clinical studies showing that long term use of the supplement actually decreases disease risk? The study should be at least as long as the Iowa Women's Health Study (19 years).

6) Finally, we should not ignore the "good news" part of the study - namely that calcium supplementation decreased mortality risk. Of course, this conclusion is subject to the same limitations as the previous ones and not every previous study has come to the same conclusion.

The DV for calcium for women in this age range is 1,200 mg/day and some 40-60% of older women do not achieve this from diet alone. I recommend that everyone strive for the DV for calcium from diet plus supplementation. Intakes slightly above 1,200 mg/day are probably safe for older women, but I don't recommend going above 2,000 mg/day.

I've covered a lot of ground over the past two weeks. Let me close with a quick summary.

- The Iowa Women's Health Study has a number of significant design flaws and its conclusions should be confirmed by subsequent studies before recommendations are made to the public.

- The study's warning against taking iron-containing supplements and copper-alone supplements is, however, right on. In postmenopausal women these supplements should only be taken if prescribed by a doctor.

- Individual high dose B6 or folic acid supplements are also probably not a good idea unless prescribed by a physician, but a well designed B complex or multivitamin supplement containing those nutrients appears to be safe.

- The risk associated with individual high dose magnesium and zinc is weak and needs to be confirmed by additional studies. Holistic supplements containing magnesium and zinc should not be a problem.

- The risk associated with multivitamin use was also weak and needs to be confirmed. My take on this is that many of the multivitamins on the market are poorly designed and could conceivably cause more harm than good. I recommend looking for holistic supplements backed by strong clinical studies showing that they are safe and effective for long term use.

- This study suggests that supplemental calcium may decrease the risk of death. While this needs to be confirmed by subsequent studies, it does make sense to make sure that you are getting the DV for calcium on a daily basis.

To Your Health! Dr. Stephen G Chaney