

Science AMA Series: I'm Vasanti Malik, research scientist at the Harvard T.H. Chan School of Public Health. I'm here to answer your questions about Dietary Guidelines in the U.S.; Ask Me Anything!

HarvardChanSPH ¹ and r/Science AMAs¹

¹Affiliation not available

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Is it true that the US Dietary guidelines are heavily influenced by lobbyists?

[darkzen15](#)

Hi, [/u/darkzen15](#). This is a great and important question. To answer this question, I think it's important to briefly explain how the dietary guidelines are created. First an advisory committee (that is appointed by the US Department of Agriculture (USDA) and Health and Human Services (HHS)) comprised of scientists and experts in the field review the evidence base to establish recommendations that is then given to the USDA and HHS for them to base the actual recommendations on ([you can read the full report here](#)). Because the advisory committee's recommendations and the actual guidelines differ to some degree it appears that there are various forces including lobbyists involved in determining the recommendations. [We have discussed this in more detail on our website](#), specifically recommendations regarding red meat and sugar-sweetened beverages, which were omitted from the final guidelines. The advisory report also focused on environmental sustainability in our diet, such as eating a more plant-based diet, and that specific link is not included in the final guidelines.

What do you think is the greatest contributing factor to the rampant obesity rate in the US?

[Mutt1223](#)

Hi [/u/Mutt1223](#), that's a great question. The increase in calories over time from increasing portion sizes for example but also the increase in intake of refined carbohydrates and added sugar. In the late 1970's the dietary guidelines recommended to decrease intake of fat for health but a consequence of this was that people increased intake of refined carbohydrates and added sugar. Both of these factors have been associated with weight gain and risk of related chronic diseases.

What's your take on coffee? I live in Utah and people around me keep saying it affects the lining of your stomach and its ability to consume nutrients. I've tried doing research on this and haven't found much consistency in the answer, so I'd love to hear from a reliable source :)

[fart_joke](#)

Hi [/u/fart_joke](#),

This is another great question which I am sure is of interest to many other people out there. Coffee, provided that it is minimally sweetened with sugar and not loaded with whipped cream can definitely be part of a healthy diet. Coffee whether it's caffeinated or decaf contains a number of healthful vitamins and nutrients and findings from our studies have shown associations with reduced risk for diabetes, cardiovascular disease and mortality. Benefits seem up to about 5 cups per day, after that there does not appear to be any additional benefit.

Here are a few links highlighting our research on coffee:

<http://www.hsph.harvard.edu/news/press-releases/moderate-coffee-drinking-may-lower-risk-of-premature-death/>

<http://www.hsph.harvard.edu/news/hsph-in-the-news/drink-up-health-benefits-of-coffee-are-numerous/>

<http://www.hsph.harvard.edu/news/multimedia-article/benefits/>

I am not aware of the link between coffee intake and harm to the stomach lining; this is not my area of expertise, but physicians usually suggest limiting intake of coffee among patients with ulcerative colitis, IBD (Inflammatory bowel disease)/IBS (Irritable Bowel Syndrome), or ulcers.

With all the flip-flopping on nearly everything in the nutrition/dietary world,

1. Why should we take the new guidelines seriously?
2. How much of these guidelines were influenced by lobbying money?
3. Why are peer-reviewed scientific studies so difficult to come by in this field?

[justscottaustin](#)

Hi, [/u/justscottaustin](#),

1. Why should we take the new guidelines seriously?
I can certainly understand this concern. The advisory committee did a thorough job in evaluating the evidence and created a very thoughtful and scientifically-based set of recommendations. These are available here: The dietary guidelines while omitting some of the original recommendations did include a number of them and the guidelines are much improved from previous years. The emphasis on dietary patterns instead of single foods and nutrients is a step in the right direction as is emphasizing a reduction in added sugar and saturated fat rather than focusing on all fat.
2. How much of these guidelines were influenced by lobbying money?
It is not clear how much but [please see my answer to that question above](#).
3. Why are peer-reviewed scientific studies so difficult to come by in this field?
There are actually a number of peer-reviewed studies related to nutrition and health. The dietary guidelines were based solely on systematic reviews and meta-analysis of peer-reviewed studies which give an overall summary of the questions at hand. The evidence is [available for public view in the nutrition evidence library](#).

Why do keto and paleo style diets (high fat, low carb) get such a bad reputation when there is so much anecdotal evidence that they improve health? The main criticisms seem to revolve around the inability

of some people being able to stick to them.

[yakka2](#)

Hi [/u/yakka2](#), There seem to be a number of questions about paleo and other popular diets. The issue here is exactly what you mention, there may be anecdotal evidence but there is very limited scientific evidence to support these types of diets. One issue is of course adherence as you mention. If people are not able to adhere to a given diet then its effectiveness is questionable. Aside from effectiveness of the diet for weight management there are other concerns with the paleo diet such as adverse health effects from restricting carbohydrates including whole grains, some fruits and dairy. High protein diets in general can also be adverse for kidney function in the long term. When it comes to dietary patterns for weight and also overall health, evidence points to consuming a Mediterranean-style diet, which also tends to more palatable than other diets.

Since a number of questions have appeared regarding diets in general, I thought I would add this point that there is very limited evidence to support a low-fat diet which has been the mantra for many years and that the evidence is influenced by many factors including the intensity of the intervention group relative to the control group. [Please take a look at our recent meta-analysis and systematic review on this topic](#) and [here's a link to an article on this study](#).

I spoke to a medical student recently regarding the observation that doctors are woefully ignorant to the topic of nutrition, and his response was that doctors would remain ignorant to topics such as treating SIBO and diabetes using both medication and nutrition until peer-reviewed research could provide more definitive answers. That said, based on preliminary research I have found on the Mediterranean diet and diabetes, I have successfully helped my overweight diabetic friend manage his blood sugar and weight to within normal levels.

Given that preventative nutrition is far more important than defensive medicine, how do you respond to his statement that research in the field of nutrition is too immature, and therefore will not be on the agenda of medical students and doctors until it can provide more definitive answers?

[strangeattractors](#)

Hi, [/u/strangeattractors](#), This is a really important issue. I know that some medical schools do include nutrition in their curriculum and it is likely that for many schools this is a new addition so you may find that younger doctors may be more inclined to discuss nutrition prevention strategies in practice. Hopefully this will continue to improve in time. But in contrary to your doctor's comment about the lack of peer-reviewed evidence, there is a plethora of high quality peer reviewed evidence linking various dietary factors to health. This is in fact what the dietary guidelines are based upon and what the advisory committee used to derive their recommendations. I would direct your doctor to [the nutrition evidence library](#). Also many doctors refer their patients to dietitians, particularly children who are struggling with weight.

Is there a perverse incentive not to deviate too far from previously issued guidelines - even if evidence says otherwise - for fear of losing credibility?

[ningrim](#)

Hi, [/u/ningrim](#), Thanks for this insightful question. I can't speak to everyone in the nutrition community but for myself, this is not an issue. In fact, I believe that while the new dietary guidelines are an improvement on past issues, they still fall short in some areas. For example, I would have liked to see a specific recommendation for limiting sugar-sweetened beverages not just added sugar given the abundance of evidence linking these beverages to health issues and I would suggest that all grains be

whole grains not just at least 50 percent. I also think that it's important to consider the environmental sustainability of the diet, which didn't make it into the guidelines from the advisory committee's report. It's important for nutrition scientists to continue to publish high-quality evidence related to diet and health that can (hopefully) impact the guidelines.

How much sodium is too much sodium, really?

[tilzer](#)

Hi, [/u/tilzer](#), This is a little tough to answer because it can depend on your background health status and background diet. For most healthy people, restricting sodium intake to 2300 mg (1 teaspoon) is what is recommended for optimal health but for those with hypertension or at risk for cardiometabolic disease a target of 1500 mg is recommended. That said, it is difficult for most people to measure or monitor their intake of sodium. Since most sodium in the diet comes from packaged and processed foods, I would recommend limiting intake of fast and processed food to keep your sodium intake in check. [You can read more about salt and sodium recommendations on our website.](#)

Is milk bad for you?

[slee89](#)

Hi, [/u/slee89](#), The answer to this question will depend on an individual's background health status. For someone with lactose intolerance or an allergy milk will obviously be a bad dietary choice. For the general public consuming milk and dairy can be part of a healthy diet. Yogurt in particular may be healthful given it's probiotic and potential beneficial effect on gut microflora. Whether dairy needs to be consumed on a daily basis is debatable. Part of the motivation behind the dairy recommendation is to ensure adequate intake of calcium, vitamin D, vitamin A, magnesium and protein. If an individual has a well-balanced diet and is getting these important nutrients from elsewhere, there is no reason to consume milk. One may also want to consider the environmental impact of dairy farming when deciding to consume milk. At the end of the day, this is an individual decision. There is no strong evidence either way regarding milk consumption. I will mention that for children, milk provides a number of healthful nutrients which they don't get from the diet given their often limited diet and replacement of milk with sugar sweetened beverages has impacted nutrient adequacy in US children. [Here's a more detailed article on milk.](#)

How would one with low socioeconomic value participate in good nutritional health. Calorie intake is increasingly important in comparison to nutrition value of calorie source when starving.

[Therealfreak](#)

Hi, [/u/therealfreak](#), This tends to be true in some settings such as in low and middle income countries but tends to be less true in the US and other high-income countries. In contrast what we tend to see is overconsumption of cheap processed or fast foods that are high in energy but low in nutritional value – leading to obesity. People aren't necessarily starving for calories but rather for healthful foods and nutrients. Population strategies to help this issue include use of SNAP benefits at farmer's markets, reducing the cost of fruit and vegetables through subsidies and elimination of food desserts. Education in low income neighborhoods is also key here. [One study found that consuming a health diet can be cheaper than an unhealthy diet.](#)

Norwegian here. I am not really all that familiar with the American system in this regard. If my question's doesn't make any sense, feel free to just skip them. Also, sorry for going a bit off topic.

1. Even though the guidelines are rather new, are there any new evidence that could challenge any of the current dietary guidelines? Or are there anything you suspect will be heavily debated when these new guidelines will be revised?
2. I understand that sometimes research results from one demography or location can't be used elsewhere. Given the size of America and the vast difference in lifestyle and habits across the country. Do you think national guidelines are the best way to ensure the population's health? Could more specific guidelines for more comparable segments of the country possibly be better?
3. One of the main UN goals is to eradicate extreme poverty and hunger. Is GMO our best current strategy to achieve that, even though it is still very controversial

[Catholic_Spray](#)

Hi, [/u/Catholic_Spray](#),

1. Even though the guidelines are rather new, are there any new evidence that could challenge any of the current dietary guidelines? Or are there anything you suspect will be heavily debated when these new guidelines will be revised?

Great question, I hope that the next iteration of the guidelines will have more specific recommendations related to intake of sugar sweetened beverages and not just added sugar and that there are more clear recommendations to reduce intake of red meat and processed meat in place of plant sources of protein for overall health and environmental sustainability. These elements were included in the advisory committee's recommendation but did not make it into the guidelines. I would also like to see specific recommendations for limiting intake of refined grains. The guidelines did a fairly good job recommending what should be consumed but more detail about what should be limited will hopefully make it into the next iteration.

1. I understand that sometimes research results from one demography or location can't be used elsewhere. Given the size of America and the vast difference in lifestyle and habits across the country. Do you think national guidelines are the best way to ensure the population's health? Could more specific guidelines for more comparable segments of the country possibly be better?

This is a good question. The US guidelines are designed for all individuals aged 2 years and older but there is a plan in the works for the 2020 guidelines to include specific recommendations for children and women during pregnancy. I do think that national guidelines are important for population level prevention of disease but it is logical and important to include modifications for special sub-groups.

1. One of the main UN goals is to eradicate extreme poverty and hunger. Is GMO our best current strategy to achieve that, even though it is still very controversial

This is such an interesting and hot topic. I think that GMO technology has the potential to help eradicate hunger if used thoughtfully and ethically.

A couple of question which no matter how much I research I continue to get different answers.

Butter or fake butter? Presuming I use the same quantity of both, and I'm using something like [flora](#) not margarine? I used to think fake butter was far more healthy but then someone pointed out how fake butter is more processed and thus most likely as bad or worse than real butter.

I don't get enough magnesium in my diet, even if I try very hard. A while ago I experienced many symptoms of magnesium deficiency; peeling skin on nails, muscle spasms, anxiety (which I believe was related). I started taking Magnesium Citrate supplements and almost immediately all of these problems resolved and I even had better sleep and better poo's. Is the continual use of these

supplements likely to be harmful? Is there any difference between getting magnesium from supplements rather than food?

Thanks!

[Thread water](#)

Hi, [/u/Thread water](#), Regarding your first question, real butter is high in saturated fat and fake butter tends to be high in partially hydrogenated oils and other additives that are not optimal for health. As mentioned in a comment below, a healthier option would be to use liquid oil such as olive oil or canola instead of butter. If this is for toast or bread, you can brush it on.

Regarding your second question, it's great that you are feeling better. I tend to prefer getting vitamins and minerals from the diet where possible since there may be synergistic effects or nutrient interactions within foods that are not present in supplements. I am not aware of adverse effects of long-term magnesium citrate use but this is not my area of expertise, so I would recommend consulting your doctor.

Gut Microbiome! It is something that has just started getting more attention and I have come across studies linking dysbiosis to multiple diseases (diabetes, obesity, IBS, etc.). How important do you feel a healthy gut is to overall health? Is it something that should be given more consideration and, with further research, could be included in future guidelines?

[rosie-posie](#)

Hi [/u/rosie-posie](#), This is indeed an emerging and exciting area. Preliminary evidence from animal studies do suggest a role of microbiome in the development of obesity and cardiometabolic disease but evidence from humans is still sparse. That said, we are in the process of collecting this type of data so more evidence in this field is forthcoming. I think that maintaining a healthy gut microflora could be important for health but we don't yet have the evidence from human studies. Depending on the accrual of research in the next 5 years, we may see a dietary pattern for optimal microflora be developed but much ground work still needs to be done. Based on what we do know now, the health benefits of dairy on diabetes risk seem to stem from yogurt and this may be due the impact of microflora. [Read a paper about that research here](#). Also some of the benefits of a plant based diet may be due to fermentation of fiber by gut microflora to short chain fatty acids.

Hello! This is so exciting! Thank you for doing an AMA. I am a registered dietitian and have a few questions about these guidelines. First off- the guidelines have changed to not have any upper limit on fat consumption, but still encourage a low saturated fat diet. What are your thoughts on coconut oil then?

[Nutritionista](#)

Hi, [/u/Nutritionista](#), These are great questions. This iteration of the guidelines has moved away from food and nutrient recommendations and towards dietary patterns since it is thought that this will be easier for the public to follow and is more in line with how we really eat. They have also moved away from recommending a low fat diet or limits on total fat given the plethora of evidence suggesting that there is no benefit of this and potential for harm (for example findings from the Predimed study). Rather they are focusing on fat quality by placing a limit of intake of saturated fat (and trans fat, although given that trans fat has been removed from the GRAS (generally regarded as safe) category, it will essentially be removed from our food system). There is not much evidence that has evaluated coconut oil specifically in relation to intake of other fats and health outcomes but some evidence suggests that saturated fats from plant sources are not as bad as saturated fats from animal sources but they are still

not as healthy as (liquid) unsaturated fats such as olive and canola.