

Prof. Lundberg (karolinska Institute) reply to the Daily Mail:

Dear Catherine Collins

We read your Daily mail article "Not-so-smart foods: Are 'natraceuticals' really as healthy as they claim to be?" (ndlr 27 mars 2011) in which you criticize the claims made for beetroot juice. We have recently demonstrated robust blood pressure lowering and vessel protective effects of beetroot juice and the results have been published in the highest quality medical journals including New England Journal of Medicine and Hypertension. In your introduction you refer to so-called smart foods with ingredients added to provide medicinal effects and you include beetroot juice in this group. We would first like to point out that in the beetroot product you refer to (Beet it shot) nothing has been added. This product is simply concentrated beetroot juice with the addition of some lemon juice, nothing else! What is even more alarming is that you don't seem to be aware of the difference between organic and inorganic nitrate. The nitrate found naturally in beetroot and other vegetables is inorganic nitrate which is fundamentally different from nitroglycerine and other drugs termed "organic nitrates" that you refer to.

If the nitrate in beetroot was an "organic nitrate" a person ingesting it would experience massive vasodilation and a potentially life threatening drop in blood pressure, but luckily this is not the case. Finally, you also refer to the possible carcinogenic effect of nitrate. Unfortunately, this is again a statement not grounded on proper literature search. The WHO and the European Food Safety Agency (EFSA) have clearly stated that there is no evidence for a role of dietary nitrate in development of cancer in man. Again, the product referred to in the text is pure beetroot juice and lemon, nothing else.

You must understand the great frustration articles like these creates for us scientists. We have devoted major parts of our careers in trying to explore the biochemistry and physiological effects of inorganic nitrate. Major breakthroughs have been done the past 5-8 years and the therapeutic potential is now being revealed. An important role for a dietician and a nutritional journalist is to inform the public about false health claims and misleading product information like you have attempted to do in the current article. However, this mission also comes with a great responsibility and the readers of Daily Mail clearly deserve articles that are based on a sound and thorough literature search.

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Nous avons lu votre article du Daily Mail "est ce que les produits nutraceutiques sont aussi bons pour la santé que ce qu'ils prétendent être" dans lequel vous critiquez les arguments en faveur du jus de betterave. Nous avons récemment démontré une diminution sérieuse de la pression artérielle et les effets protecteurs des vaisseaux grâce au jus de betterave et les résultats ont été publiés dans les revues médicales de haute qualité, y compris le New England Journal of Medicine and hypertension. Dans votre introduction, vous référez à des aliments dits intelligents avec des ingrédients ajoutés pour fournir des effets médicaux et vous incluez le jus de betterave dans ce groupe. Nous tenons d'abord à souligner que dans le produit auquel vous vous référez (beet it shot), rien n'a été ajouté. Ce produit est simplement un concentré de jus de betterave avec l'ajout d'un peu de jus de citron, rien d'autre ! **Ce qui est encore plus alarmant, c'est que vous ne semblez pas être au courant de la différence entre nitrate organique et inorganique.** Le nitrate qui se trouve naturellement dans la betterave et d'autres légumes est le nitrate inorganique qui est fondamentalement différent de la nitroglycérine et d'autres médicaments faisant partie des nitrates organiques que vous évoquez.

Si le nitrate issue de la betterave était un «nitrate organique", une personne qui l'ingérerait subirait une vasodilatation massive et une baisse potentiellement mortelle de la tension artérielle, mais heureusement ce n'est pas le cas.

Enfin, vous évoquez également un effet cancérigène possible pour les nitrates. Malheureusement, c'est encore une fois une assertion qui n'est pas fondée sur une recherche de littérature suffisamment étayée. **L'OMS et l'Agence européenne de sécurité alimentaire (EFSA) ont clairement déclaré qu'il n'y avait aucune preuve d'un rôle du nitrate alimentaire dans le développement du cancer chez l'homme.**

Encore une fois, le produit visé dans le texte est un pur jus de betterave et de citron, rien d'autre.

Vous devez comprendre que **des articles comme celui-ci créent pour nous, les scientifiques, de grandes frustrations. Nous avons consacré la plus grande partie de notre carrière à essayer d'explorer les effets biochimiques et physiologiques des nitrates inorganiques.** Des avancées majeures ont été réalisées les 5-8 dernières années et le potentiel thérapeutique est maintenant révélé. Un rôle important pour une diététicienne et une journaliste spécialisée en nutrition est d'informer le public sur de fausses allégations de santé et des produits trompeurs comme vous avez tenté de faire dans l'article en question. Toutefois, cette mission relève également d'une grande responsabilité et les lecteurs du Daily Mail méritent clairement des articles qui sont basés sur une recherche documentaire approfondie.

By Catherine Collins

Last updated at 12:31 AM on 27th March 2011

From cholesterol-lowering cheese to beetroot shots that claim to prevent blood clots and vitamin-enhanced water, supermarket shelves heave with nutraceuticals - so-called smart foods with ingredients added to provide medicinal effects.

But are they really as healthy as they claim to be?

Catherine Collins, principal dietician at St George's Hospital, London, analysed the nutritional content of some of the bestsellers, and the results were shocking.

MINICOL MATURE CHEESE

The claim: 'Proven to reduce cholesterol.'

Recommended dose: 68g (£2.13 for 195g).

Values per 100g: 400 cal, protein 22.5g, carbohydrates 1g, fat 34g (of which saturates 5g, monounsaturates 10.5g, polyunsaturates 18.5g).

Catherine says: The dairy fat has been removed and wheatgerm oil substituted in the cheese-making process, reducing the amount of saturated fat normally present in large amounts in hard cheeses. Wheatgerm oil naturally contains plant sterols, natural cholesterol-lowering agents.

Although this makes the cheese richer in healthier mono and polyunsaturated fats, which will also help manage cholesterol, the amount of cholesterol-lowering plant sterols from wheatgerm oil present in a usual 30g portion size is unlikely to have a major lowering effect.

The 68g of cheese a day required for their cholesterol reducing claim would provide you with 320 calories and 23g of fat, virtually the equivalent to the fat in a Big Mac.

HOVIS HEARTY OATS LOAF

The claim: 'Helps maintain normal cholesterol.'

Recommended dose: None given (£1.4 for 800g).

Per slice: 109 cal, protein 5.4g, carbohydrate 16.4, fat 0.4g, jumbo oats 20 per cent, beta-glucan 1.1g, salt 0.5g.

Catherine says: You would need to eat six slices of this bread daily to consume enough beta-glucan - a dietary fibre found naturally in oats - to lower blood cholesterol.

Considering each slice contains 109 calories, you would be consuming 654 cal, which is around a third of the average woman's daily calorie requirement.

Six slices would also provide 3g of salt, half of the daily recommended healthy limit - that's as much as four bags of Walker's salt-and-vinegar crisps. High salt levels in the diet can lead to raised blood pressure, increased risk of heart attack and stroke, bone-thinning and even stomach cancers.

VITAMIN WATER

The claim: 'Vitamin enhanced beverage - vitamins + water = all you need.' Recommended dose: 500ml (£1.42 for 500ml bottle).

Per bottle: Spring water containing 50 cal, Vitamin C, niacin (B3), Vitamin B6, Vitamin B12, pantothenic acid, sugar 13g.

Catherine says: This provides half the RDA of several water-soluble vitamins, but these ones are rarely deficient in the UK diet so they are a pointless addition.

There is no actual juice in this product but there is 13g of sugar which is about half of a can of Coca-Cola.

Instead, drink water and take a one-a-day multivitamin and mineral formula which provides a wider nutrient supplementation and is less likely to cause tooth decay.

BENECOL LIGHT YOGURT DRINK

The claim: 'One bottle a day is enough to lower your cholesterol.'

Recommended dose: 67.5g (£3.47 for 6 x 67.5g bottles).

Per bottle: 40 cal, fat 2g, carbs 7.3g, protein 2.8g, plant stanol ester 2g.

Catherine says: This product has been proven to work, reducing total cholesterol by up to 15 per cent and LDL (bad) cholesterol by ten per cent in just one shot per day.

However, considering this is labelled as a 'Light' product, one would expect it to have fewer calories than the normal version.

In fact, the fat content is the same, at 1.4g per bottle, and the sugar content in the 'normal' version is 3.1g, yet in the Light bottle it is 4.7g.

The 'normal' calorie count is 38 and the Light version is 40.

This may seem a small difference, but if you are counting the calories, are on a low sugar diet or have diabetes, then you have a product that is more sugary than the normal version.

MULLER VITALITY PREBIOTIC - PROBIOTIC LOW-FAT YOGURT DRINK

The claim: 'Helps maintain the natural balance of a healthy digestive system.' Recommended dose: 100g (£1 for 6 x 100g bottles).

Per bottle: 71 cal, protein 2.6g, carbohydrate 11.1, calcium 90mg, fat 1.4g (sats 0.9g), prebiotic fibre 2.5g.

Catherine says: This contains probiotic bacteria, which aid bowel flora - microorganisms - that keep the gut healthy. It also contributes to protein and calcium intake in modest amounts.

However, lack of clinical evidence means a nutritional claim for improved bowel health for these products is not possible, hence the vague 'healthy digestive system' claim.

Whether improved bowel health occurs is not proven but the bottle contains less than half the protein and half the calcium of a 125g pot of its sister product, Vitality Yoghurt, so it's better to buy the yogurt version.

BEET IT STAMINA SHOT

The claim: 'Tests have shown that the nitrate present in beetroot juice can prevent blood clots, protect blood vessels, and lower your blood pressure.'

Recommended dose: One bottle daily one to three hours before exercise (£1.85 for 70ml).

Per shot: 71 cal, protein 2.5g, carbohydrates 17g, fat 0g, dietary nitrate 0.3g.

Catherine says: Studies have shown that eating large amounts of beetroot can lower blood pressure. One theory is that the naturally occurring nitrates found in these are responsible.

Nitrate is generally harmless, but a small amount is converted by our saliva into compounds called nitrites which, in the presence of dietary protein, can be converted in the stomach into nitrosamines, chemical compounds that can be carcinogenic. Nitrates are also used in medicine - they dilate blood vessels which can help heart disease patients.

I find it a concern that this small 70ml bottle gives 30 times more nitrate than the maximum prescribed medical nitrate dose to control angina.