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## Let's not turn elderly people into patients Wanted

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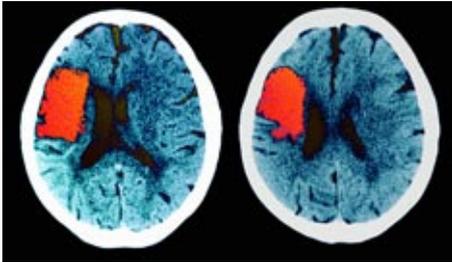
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ZEPHYR/SPL

## LIFESTYLE HABITS AND RISK OF STROKE

### Consider sex and stroke subtypes

The finding reported by Myint et al that lifestyle habits have beneficial effects on stroke occurrence is very reassuring and support previous results of large scale, US based cohort studies.<sup>1-3</sup> Several points merit further comment.

Firstly, while the authors show several multivariable models, their main relative risk estimates come from a model that also controlled for body mass index, systolic blood pressure, and cholesterol concentration. These factors are, however, strongly influenced by lifestyle habits and can be considered potential mediators of the association between lifestyle habits and stroke. In addition, controlling for potential direct consequences of exposure may lead to biased effect estimates.<sup>4</sup> Lifestyle habits may thus have an even stronger influence on stroke occurrence.

Secondly, the association between lifestyle habits and risk of stroke in the study is magnified in women. Compared with men who have a combination of all four lifestyle habits, women seem to achieve a similar risk reduction with merely two such habits. Lastly, the EPIC-Norfolk data do not allow differentiation between ischaemic and haemorrhagic stroke. Data from the Women's Health Study show that a lifestyle considered to be healthy was associated with markedly reduced risk of ischaemic, but not haemorrhagic, stroke.<sup>2</sup> The risk of haemorrhagic stroke was highest for women who were classified to live the "healthiest" lifestyle.

The data from the study by Myint et al strongly support the influence of lifestyle habits on stroke risk, and all efforts should be made to emphasise a healthy lifestyle. Future research should focus on potential differences between the sexes of the association between overall and specific lifestyle habits and stroke as well

as on potential differences of lifestyle habits on major stroke subtypes.

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**Competing interests:** None declared.

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### Authors' reply

We agree with Kurth that intermediate risk factors for stroke such as body mass index, systolic blood pressure, and cholesterol concentration are influenced by the lifestyle factors that we examined. This could lead to the attenuation of our results, as highlighted by Kurth. The observed relations seemed to be over and above the impact on these potential mediators on stroke risk.

We also agree that the underlying pathophysiology differs between ischaemic and haemorrhagic stroke and that it is possible that men and women may differ. Nevertheless, the assertion by Kurth, based on findings from the Women's Health Study, that haemorrhagic stroke was highest for women with healthiest lifestyle<sup>1</sup> requires further exploration given the small number of outcomes in their study with reported adjusted hazard ratio of 1.27 (95% confidence interval 0.37 to 4.29;  $P=0.62$  for trend) with non-significant results for haemorrhagic stroke. Although it is possible that differences exist between health behaviours and stroke subtypes in men and women, the current study did not have adequate power to examine this. However, it is reassuring that the relations were observed with total stroke events, irrespective of subtypes.

Until further evidence provides support for Kurth's assertion, the overwhelming evidence supports the role of positive health behaviours to prevent stroke. We agree with Kurth that having deeper insight into and a better understanding of differences between the sexes and potential effect of lifestyle behaviours on different stroke subtype would be the way forward.

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**Competing interests:** None declared.

- 1 Kurth T, Moore SC, Gaziano JM, Kase CS, Stampfer MJ, Berger K, et al. Healthy lifestyle and the risk of stroke in women. *Arch Intern Med* 2006;166(13):1403-9.

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## ALLERGIES HYSTERIA IS JUST NUTS

### Some auto-injection pens are counterintuitive

Type I allergy carries the risk of incorrect self treatment.<sup>1</sup> In patients with type I allergy and established systemic reactions, treatment includes self injection of adrenaline with prefilled devices—the EpiPen device is constructed to look like a ballpoint pen. Unfortunately it is constructed as an upside-down pen: the needle emerges from what at first glance seems to be the button end of the pen, not the end where one would expect the ink covered ballpoint tip to emerge.

Consequently, during the 2008 wasp season, we experienced two cases of adverse self injection in the thumb. Sixty seven patients with wasp stings were seen, 16 of whom presented with systemic allergic reactions. Six of the 16 were already known to have such reactions and had attempted auto-injection of adrenaline. In two of the six patients, the procedure was wrongly performed: one auto-injected into the thumb, and another never received adrenaline because his daughter, a consultant in anaesthesia, auto-injected into her thumb when trying to help him. Most adrenaline self treatments are correctly performed, but our unfortunate patients are not alone,<sup>2-4</sup> and in a study using EpiPen dummies, 16 of 100 doctors injected into their thumb when trying to demonstrate a correct auto-injection.<sup>5</sup>

Incorrect self injection is life threatening and not easily avoidable through education if doctors, even including a consultant in anaesthesia, cannot perform the procedure correctly. Adrenaline auto-injection treatment must be based on a 100% self evident injection procedure.

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**Competing interests:** None declared.

**Editorial note:** Patient consent obtained.

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## MRSA SCREENING

### Clarity is needed on which sites to screen

Kluytmans and Struelens, in their clinical review on methicillin resistant *Staphylococcus aureus* (MRSA) in hospital, concluded that the most important site to screen for MRSA carriage was the nose and that screening other non-clinical sites (perineum, groin, or axilla) was not useful.<sup>1</sup>

This is contrary to the practice in most UK hospitals, where the perineum and groin are also screened on the basis of the national guidelines published in 2006.<sup>2</sup> Screening the nose alone will detect around 80% of carriers; including the perineum increases this to 93%.<sup>3</sup> Not only is the overall detection rate increased, but detection of perineal carriers is important because this is correlated with more heavy dispersal of MRSA into the environment.<sup>4,5</sup>

This is an important issue for trusts having to implement the Department of Health's requirement to screen all elective admissions by 1 April 2009. The two sets of operational guidance do not specify which sites should be screened apart from the nose, and it is left to the microbiologist and infection prevention and control teams to make the decision.

The guidance should be clearer and either accept that some heavy shedders of MRSA will be missed by screening the nose only, or include a perineal screen which will require both extra resources in nursing time to obtain the screen and laboratory cost and time to process the additional samples.

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## DIAGNOSIS OF HEART FAILURE

### Ontological fallacy in heart failure

Echocardiography<sup>1</sup> has resulted in the belief that heart failure and reduced ejection fraction are synonymous. Recently, however, the utility of ejection fraction in diagnosis has been undermined by epidemiological studies, which have shown that ejection fraction is continuously distributed in populations with heart failure,<sup>2</sup> and that survival is the same irrespective of whether there is heart failure with normal ejection fraction (HFNEF) or with reduced ejection fraction (HFREF).<sup>3,4</sup> In effect it is the clinical label of heart failure that drives prognosis, not the ejection fraction. The adoption of a dichotomous value (the division of cardiac function into normal and reduced ejection fraction) to describe a continuous variable is now outmoded and unhelpful.

The relative lack of benefit in studies in HFNEF may be a failure of the therapeutic modes of action of the drugs studied, since there is no physiological reason why afterload reduction in non-dilated hearts will produce prognostic benefit. We may be trying the wrong drugs because we do not fully understand the condition. We do not understand the condition because our terms of reference are those of echocardiography.



HFREF is characterised by ventricular dilation and HFNEF by normal left ventricular end diastolic diameter. Both, however, display markedly raised left atrial pressure, although this is often difficult to measure with echocardiography. Brain natriuretic peptide, a marker of cardiac wall stress, is elevated in both conditions. HFREF and HFNEF also share many clinical features (usually characterised by congestion) and an equally poor prognosis.

Gale refers to the ontological fallacy into which we fall when we invent categories for our own convenience and then treat them as if they had a real existence.<sup>5</sup> By bestowing diagnostic supremacy on an ontological fallacy in heart failure we have allowed the ejection fraction to usurp our thinking and warp our semantics (HFNEF, HFREF, etc). We need to reopen our minds to completely understand this fatal congestive syndrome.

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## DON'T TURN OLD PEOPLE INTO PATIENTS

### Wanted: age adjusted outcomes

Who really knows what elderly individuals want and need in terms of health care?<sup>1</sup> What outcomes matter to them, and their spouses and families? Once we know this we could try to gather evidence of effectiveness and cost effectiveness of treatment aimed at achieving goals that really matter to them. This would require taking a perspective that gave special attention to their limited life expectancy, limited functional and cognitive reserves, comorbid conditions, and their risks of experiencing an adverse outcome in the near future. A transition to a definition of appropriate health care based on desired outcomes seems warranted.

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- 1 Oliver M. Let's not turn elderly people into patients. *BMJ* 2009;338:b873. (3 March.)

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