

factors, most of which would be independent rather than a consequence of nut eating. These benefits have been corrected for, but possibly not enough. The nurses' health study is a huge (and extremely productive) postal study whose participants have never been subjected to the clinical routines of other American cohort studies. Self reported hypertension was marginally least common in the high consumption group, whereas hypercholesterolaemia was marginally most common. These could not explain a halving of risk. The authors list eight constituents of nuts that might contribute to nutritional benefit but cannot be more specific, a common problem after identifying potentially beneficial dietary habits.<sup>11</sup>

Further corroboration and investigation are obviously needed, but nuts may meanwhile be rehabilitated as a likely constituent of a prudent diet. Red wine drinkers can claim, with apparent authority, that they are taking their daily dose of flavonoids. Those eating nuts (perhaps in combination with red wine) will currently have greater difficulty in identifying specifically what they are doing, other than eating nuts. They should thank the American nurses none the less.

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## Violent suicide and obstetric complications

### *The link is mental illness*

Papers p 1346

Each year in England and Wales there are 5500 suicides and deaths from undetermined external cause (these are mostly suicides leading to an open verdict at inquest), and almost half are by methods involving physical injury.<sup>1</sup> These methods are diverse and include hanging, jumping from a height or in front of a moving vehicle, burning, and firearms. They do, however, have common characteristics which allow comparison with suicides by non-violent methods such as poisoning by overdose or car exhaust fumes. Both violent methods and asphyxiation by exhaust fumes are substantially more common in men (as are other types of violent behaviour), in whom hanging is now the most common method of self destruction.<sup>1</sup> Violent suicides are associated with severe mental illness such as schizophrenia and major affective disorder,<sup>2</sup> although mental disorder of some kind is found in most suicides.<sup>3</sup> Internationally the method of suicide is also influenced by local factors including availability, so that jumping from buildings is particularly common in Hong Kong<sup>4</sup> and deaths from firearms are related to gun ownership in the United States.<sup>5</sup> Nevertheless, the links between violent suicide and both male sex and mental illness generally hold true.

Researchers from Sweden describe in this issue how they have tried to trace the origin of violent suicide to perinatal experience (p 1346).<sup>6</sup> Jacobson and Bygdeman obtained birth records for a sample of individuals who had committed suicide by violent means in

1978-95 and who had been born in one of seven Stockholm hospitals after 1945. The records provided information, extracted by blind raters, on obstetric complications, including atypical presentation, meconium staining of the amniotic fluid, assisted delivery, and neonatal resuscitation; the total number of such incidents was recorded as an individual's "trauma score." The number of doses of opiates administered in the 24 hours before delivery was also recorded.

The people who committed suicide were then compared on these variables with their siblings who had been born in the same hospitals but who had not committed suicide (suicide victims without siblings were excluded from the main analyses). Using siblings as a comparison group allowed cases and controls to be matched on some potentially confounding social and family variables. The authors also report that suicides and their siblings had a negligible average difference in year of birth, though this is not the same as eliminating the confounding effect of year of birth: both suicide rates and obstetric practice have significantly changed over time.

The study found that people who committed violent suicide had higher rates of some obstetric complications, higher trauma scores, and lower rates of opiate administration. In a multivariate analysis violent suicide was predicted by maternal age, male sex, absence of opiate administration, and an interaction of male sex and trauma score. The findings extend those of a United States study which found perinatal

*BMJ* 1998;317:1333-4

complications to have been more common in adolescents who committed suicide.<sup>7</sup>

It is not, however, the findings of the study but the authors' interpretation of them that will attract most attention. Jacobson and Bygdeman conclude that the pain experienced by infants during complicated delivery is likely to be linked causally to violent suicide. The findings are presented as supporting their hypothesis that when committing suicide some people unconsciously recreate the traumatic sensation of their birth. They believe the causal mechanism to be imprinting and point to the specificity of the effect on males as supportive evidence, because testosterone is known to enhance imprinting in animal studies. They argue that to avoid future increases in the incidence of violent suicide obstetric procedures should aim to prevent infants from experiencing "even slight physical discomfort."

Here they can expect to part company from most suicide researchers. Those who accept the imprinting theory will need to be confident that they have the answer to a number of questions. To what extent are the obstetric complications in the study, and the trauma scores derived from them, a valid indicator of infant pain? How strong is the evidence that infant brains store perinatal experiences, let alone recreate them in adulthood? In what sense does hanging or jumping off a building correspond to forceps delivery or neonatal resuscitation?

Any link between obstetric care and violent suicide is more likely to occur through mental illness. Considerable evidence exists that obstetric complications are associated with schizophrenia. A recent meta-analysis, finding the association to be strongest in early onset cases, concluded that neurodevelopmental impairment, possibly the result of fetal hypoxia, was part of the causal process in these cases.<sup>8</sup> A similar neurodevelopmental hypothesis has also been proposed for major affective disorder.<sup>9</sup> Any factor

associated with severe mental illness is likely to be associated also with violent suicide.

However, even an indirect link between perinatal trauma and suicide may be important, although the potential to reduce the numbers of violent suicides through improved obstetric care is then far less than the attributable risks calculated by Jacobson and Bygdeman would suggest. Their study reminds us that the road to self destruction is long, but the key issues for suicide prevention remain: to understand and reverse the doubling of suicide rates in young men over the past two decades; to develop services that will reduce risk after deliberate self harm; and to find the evidence on interventions that will make mental health care safer.

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## Age related outcome in acute myocardial infarction

*Elderly people benefit from thrombolysis and should be included in trials*

Patients older than 70 account for a third to a half of patients with acute myocardial infarction admitted to hospital,<sup>1</sup> and 80% of deaths due to acute myocardial infarction occur in those aged over 65 years, 60% of them in people aged 75 or more.<sup>2</sup> Despite extensive studies of thrombolytic treatments in large numbers of patients, we lack data on elderly subjects over 75 and particularly among those over 85. The size of the elderly population is growing: between 1982 and 1992 the Nottingham heart attack register recorded a 70% increase in patients aged 70-74 admitted with myocardial infarction and a 200% increase in those aged 75 or over.<sup>3</sup> Hence we must be able to assess the optimal therapeutic strategies for such patients.

The application of trial results to clinical practice is hampered by the fact that such patients, although accounting for up to half of cases of myocardial infarction and having a disproportionately high mortality, are significantly underrepresented in clinical trials.

Over 60% of trials have excluded patients aged over 75, with higher rates of exclusion in studies involving invasive procedures.<sup>2</sup> An overview of thrombolytic trials showed that only 10% of patients were aged over 74.<sup>4</sup>

Older patients have a higher incidence of previous myocardial infarction, heart failure, cardiogenic shock, atrioventricular block, and atrial fibrillation or flutter.<sup>5</sup> In the angiographic substudy of GUSTO-1, older subjects had higher rates of TIMI grade 0 flow and lower rates of TIMI grade 3 flow, more multivessel disease, and lower left ventricular ejection fractions.<sup>5</sup> Thus it is not surprising that studies that have included older people have shown higher mortality with treatment than have trials in younger patients. For example, the Fibrinolytic Therapy Trialists' Collaborative Group showed 35 day mortality for thrombolytic treated patients of 3.4%, 7.2%, 13.5%, and 24.3% respectively for people aged <55, 55-64, 65-74, and ≥75.<sup>6</sup> In the GUSTO-1 study patients aged over 75 treated with

*BMJ* 1998;317:1334-5