The Hague, Health Council of the Netherlands

Network is published by the Health Council of the Netherlands.

The Health Council of the Netherlands, established in 1902, is an independent scientific advisory body. Its remit is "to advise the government and Parliament on the current level of knowledge with respect to public health issues and health (services) research..." (Section 22, Health Act).

The Health Council receives most requests for advice from the Ministers of Health, Welfare & Sport, Housing, Spatial Planning & the Environment, Social Affairs & Employment, Agriculture, Nature & Food Quality, and Education, Culture & Science. The Council can publish advisory reports on its own initiative. It usually does this in order to ask attention for developments or trends that are thought to be relevant to government policy.

Most Health Council reports are prepared by multidisciplinary committees of Dutch or, sometimes, foreign experts, appointed in a personal capacity. The reports are available to the public (http://www.healthcouncil.nl).

Body-building while you sleep

Use of doping by top athletes is still an emotive issue. Is an entirely 'clean' Tour de France a realistic option? Does the 'whereabouts' rule constitute an excessive breach of athletes' privacy? The prevalence of such issues in the media is influencing the public debate on doping.

These issues appear to be part and parcel of professional sport, but to what extent are casual sporting activities affected by doping? The latter category includes the numerous athletes who visit fitness centres from time to time, or who enjoy a few hours cycling with their friends. Such use is difficult to determine with any degree of precision. Nevertheless, it would be very useful to be able to make an informed estimate and to carry out a risk analysis. Which drugs are most commonly used? Does this constitute a danger to health? For example, do these athletes sometimes use more hazardous 'impure' concoctions, as is the case in the party circuit? The Health Council's recently established Committee on Doping in Non-Organised Sport will endeavour to address all of these questions in its advisory report.

In contrast to the world of professional sport, doping in non-organised sport by no means always involves performance-enhancing drugs. Such behaviour is far more often motivated by a desire to enhance one's appearance. It is astonishing what lengths people will go to in order to 'outshine' others. There are even reports concerning the use of a substance that generates an inflammatory reaction - to give the impression of greater muscle mass. Body-building while you sleep is certainly an appealing idea.

EuSANH - third conference and European grant

T.M.M. Coenen, M.Sc is a member of the Health Council's scientific staff.

EuSANH (European Science Advice Network for Health) is a network of national scientific advisory bodies in the field of public health. EuSANH currently represents the Health Councils of twelve European member states, and further expansion is expected. The Health Council of the Netherlands is the current holder of the EuSANH Presidency (André Knottnerus) and Secretariat (Dorine Coenen).

The European Health Councils are planning to coordinate with one another even more closely in future, in order to better address cross-border health issues and to achieve an efficient allocation of tasks. This work will include collaborative endeavours to develop common advisory methods and joint advisory programmes. A separate programme was recently launched in order to achieve the latter two targets: EuSANH-ISA (Improving Science Advice for Health in Europe).

The third EuSANH Conference

The Health Council hosted the third EuSANH Conference on 4 and 5 December, 2008. Two recurrent themes throughout the conference were identifying specific avenues of collaboration and determining an organisational structure for EuSANH-ISA.

Frans Timmermans, the State Secretary for European Affairs, opened the conference with a speech about the importance both of cross-border European health care and of scientific cooperation between EU Member States. The conference participants went on to discuss ways of coordinating the various national work programmes. They also compiled a list of sixteen potential topics on which the EuSANH network could produce a joint advisory report. The overarching theme of the second day of the conference was the prevention of chronic disorders. During his speech, Dirk Ruwaard (head of the Public Health Directorate at

the Ministry of Health, Welfare and Sport) introduced the theme of the day by exploring the importance of public health, prevention and care, as well as the part that scientific advisory bodies can and do play in these areas. Marc Suhrcke (University of East Anglia, Norwich, UK) then gave a lecture on the social and economic impact of prevention.

European grant for three-year project

EuSANH has just been awarded a European grant for the EuSANH-ISA Project. The goal of this three-year programme is to improve the quality, effectiveness and efficiency of scientific advice that is aimed at promoting European public health. Within the framework of EuSANH-ISA, the advisory bodies affiliated to EuSANH will develop a range of methods for making the greatest possible use of each other's specific knowledge and expertise. EuSANH-ISA will also prepare the way for the production of joint advisory reports on a wide range of topics: infectious diseases and vaccination, obesity, cancer, public mental health, advanced hospital care. The Health Council of the Netherlands is coordinating this project. The first topic for a pilot joint advisory report will soon be selected, in consultation with all of our partners within EuSANH.

Further details are available at www.eusanh.eu/activities.html

Health Care

Hans Houweling
Christiaan Wittevrongel

Hepatitis B can be controlled more effectively by vaccinating all children

Dr. H. Houweling and C.F.W. Wittevrongel, M.Sc are members of the Health Council's scientific staff.

In 2007, the Health Council assessed the appropriateness of twenty-three forms of vaccination for inclusion in the National Immunisation Programme (NIP). Vaccination against hepatitis B was one of four candidate vaccinations that satisfied the criteria for inclusion in the NIP. The established strategy for controlling hepatitis B in the Netherlands has been to vaccinate only people in certain at-risk groups. A great deal has been achieved by this strategy. However, substantial additional health gains could be secured at relatively little expense by making the vaccination available to all children. The Health Council is therefore recommending that general vaccination against hepatitis B is provided through the National Immunisation Programme. The Minister of Health, Welfare and Sport was informed of the Council's conclusion and the reasons for it on 31 March 2009.

Hepatitis B is a serious liver disease, which is caused by a virus. Those who contract the illness are likely to become carriers, particularly if infection occurs during childhood; chronic infection (carriership) can give rise to serious complications, such as cirrhosis and cancer, leading ultimately to death. The hepatitis B virus can be passed from mother to child at birth, by close contact with a carrier in the home, by blood contact, or by high-risk sexual behaviour.

In the Netherlands, vaccination against hepatitis B is made available to certain at-risk groups, including children whose mothers are carriers, people whose lifestyles put them at elevated risk and medical and paramedical personnel. Since this policy was adopted, a great deal of disease has been prevented in these groups. However, the Health Council has been investigating whether vaccination should be made available to all children, because it has not proved possible to achieve a sufficiently high vaccination rate

in all at-risk groups, and because roughly a quarter of all new infections occur in people who do not belong to a known at-risk group. Vaccination against hepatitis B is a well-established procedure in the Netherlands and elsewhere, which is known to be effective and safe.

In the Council's report, the existing policy is compared with the general vaccination of infants, and with the general vaccination of adolescents. The conclusion of this comparison is that the vaccination of all children early in life is the most effective way of combating the disease. If the vaccine were combined with existing infant vaccines, no additional shots would be needed. The cost of general vaccination on that basis would be relatively low.

Prevention of health problems in the elderly: promotion of independent living is the key

Dr. M. de Waal is an editor at the Health Council.

Older people should be helped to continue leading independent lives for as long as possible, by seeking not only to reduce ill health, but also to promote independent living. The focus should be on strategies whose effectiveness has been scientifically demonstrated, and which older people are willing and able to incorporate into their normal lives. As people get older, the importance of personal choice increases. If these points are taken into account, there is a lot to be gained – both for the elderly themselves and for the wider community – by action to prevent health problems in older people. However, a great deal still needs to be done if the potential benefits are to be realised. These are the central conclusions of *Prevention in the elderly: Focus on functioning in daily life*, a Health Council report submitted to the Minister of Health, Welfare and Sport on 21 April 2009.

Healthy or successful aging is not only about identifying and treating health problems. Many older people consider it much more important that they can organise their own daily lives, do things for themselves and continue to function socially. These things can be compromised in all sorts of ways. Illness and disabilities are the main threats to independence, but countless personal and environmental factors, events and social developments can also play a part. Relevant issues include lifestyle, ability to cope with ill health, motivation to remain active, social and domestic circumstances. As a person's physical and mental reserves decline with age, a disturbance in his or her equilibrium can easily trigger a cascade of decline, which is difficult to arrest. Measures aimed at preventing ill health in older people therefore need to focus on reducing the risk of the cascade starting. Independent living has an important intermediary role to play in this context. The health care sector – with primary carers taking the lead – therefore needs to

focus much more attention on factors that can have a positive effect on the functional capabilities of older people whose continued independence is at risk. Personal choice and the retention of as much self-sufficiency as possible remain important, even when independent living ceases to be a realistic option.

The committee responsible for the report places particular emphasis on what it calls 'function-oriented prevention', involving the detection and treatment of functional disabilities, increasing an older person's ability to remain independent and addressing environmental factors that tend to impair functional capacity. The committee also observes that a lot more is known about the determinants of functional impairment than about preventive intervention in the process of decline. The report therefore concludes with a number of recommendations regarding future research.

Better screening for pregnancy immunisation

Dr. K. Groeneveld is a member of the Health Council's scientific staff.

A pregnant woman can sometimes produce antibodies against the red blood cells of her (unborn) child. These antibodies can destroy the red blood cells of the foetus or newborn baby, resulting in ill health or even death. In recent years, the means at our disposal for preventing antibody formation have increased. Research conducted in the Netherlands as part of the Detection and Prevention of Pregnancy Immunisation Project (OPZI Project) has made a considerable contribution in this regard. The implications of the advances made in this field are the focus of a report that the Health Council submitted to the Minister of VWS on 26 March 2009.

The report looks at two types of antibody against red blood cells: D antibodies and non-D antibodies. The former attack the rhesus-D antigen, while the latter attack other red blood cell antigens. It has long been known that the D antibodies could destroy red blood cells, but until recently it was not certain whether non-D antibodies had a similar effect.

Screening for non-D antibodies

The OPZI Project showed that, by screening expectant mothers for non-D antibodies, four to six cases of foetal or perinatal mortality or brain damage could be prevented for every 100 000 women tested. Screening for pregnancy immunisation is considered to meet the generally accepted criteria for the establishment of a programme and the committee therefore recommends the introduction of programmatic screening. The committee favours selective screening (i.e. screening only women who have had an earlier pregnancy or have previously received a blood transfusion) and selective follow-up (i.e. follow-up only where certain types of non-D antibody are detected).

Modification of blood transfusion policy to reduce of non-D antibody formation

One of the OPZI Project's findings was that women who have previously had a blood transfusion are more likely to develop non-D antibodies than other women. The committee therefore suggests a number of ways in which the approach to giving blood transfusions to girls and to women of child-bearing age could be changed so as to minimise the risk of antibody formation.

Supplementary prenatal prophylaxis to combat D antibody formation

The Netherlands have had a programme to prevent D antibody formation for forty years. By testing newborn babies for the rhesus-D antigen, it is possible to establish whether the mother is at risk of antibody formation. If she is, prophylactic (i.e. preventive) immunoglobulins are administered in order to prevent the development of D antibodies. Because D antibody formation sometimes occurs during pregnancy, prenatal prophylaxis has also been provided since 1998. On the basis of the OPZI Project findings, the committee recommends continuing the provision of this supplementary prophylaxis.

Prenatal testing for rhesus-D antigens as a basis for targeted prophylaxis

In the past, it was not possible to test for rhesus-D antigens – or therefore to tell whether a woman was at risk of forming D antibodies – until after birth. Consequently, supplementary prophylaxis has been provided for all women, including those who are not at risk. However, prenatal testing for rhesus-D antigens is now possible. The committee favours the introduction of such testing, so that supplementary prophylaxis need be given only to those who are at risk.

Advisory letter Vaccination against Mexican flu

Dr. H. Houweling is a member of the Health Council's scientific staff.

On 29 April 2009, the Minister of Health, Welfare and Sport asked the Health Council of the Netherlands to issue an emergency report on vaccination against Mexican flu. The Committee on Vaccination during an influenza pandemic published its report in response to this request on 8 May. The Committee has answered the Minister's questions with reference to the preparatory work for a general advisory report on the role of vaccination in preparation for an influenza pandemic, which is scheduled for publication in July 2009.

As yet, there is insufficient data for an adequate assessment of the epidemiological situation with regard to Mexican flu. However, researchers have learned quite a lot about the virus itself. Its capacity for human-to-human transmission seems to be about the same as that of 'normal' seasonal flu. There is a possibility that the virus will mutate into a more pathogenic strain.

The report provides a scientific commentary on the various policy options available. The Committee concludes that current vaccines against seasonal flu can only be expected to confer a very limited degree of protection at best. Given the major antigenic difference between the Mexican flu virus and the H1N1 seasonal strain, an enhanced seasonal vaccine would also be unlikely to provide adequate protection.
If the Minister decides to proceed with the purchase of a vaccine, the Committee concludes that it would be preferable to opt for an adjuvanted vaccine based on the Mexican flu virus. The efficacy and safety of vaccination should be very closely monitored from the outset.

The report ends with a number of considerations pertaining to the careful implementation of any vaccination programme.

The COCOS Trial

W.A. van Veen is a member of the Health Council's scientific staff.

Under the Population Screening Act (WBO), the Minister of Health, Welfare and Sport is required to consult the Health Council before making a decision to permit or withdraw permission for a screening programme of a kind covered by the act. Responsibility for advising the Minister lies with the Council's WBO Committee, which was set up in 1995. On 15 April 2009, this committee issued a report recommending that the so-called COCOS Trial be given the go-ahead.

Coloscopy

Coloscopy is a form of endoscopic examination of the entire large intestine. It involves 'exploration' of the bowel using a very thin and flexible optical fibre, typically 160 centimetres long, with a video camera on the end. In preparation, the patient is given a powerful laxative or complete colonic irrigation. The purpose of coloscopy is to detect and, where possible, immediately remove advanced adenomas (precursors of colon cancer) and colon cancers (colorectal carcinomas). Such intervention significantly reduces the likelihood of, respectively, developing colon cancer or dying from colon cancer. Coloscopy is generally seen as the gold standard for diagnostics in this field, but its effectiveness has never been investigated in a prospective study using bowel cancer mortality as the monitored outcome. The use of coloscopy to screen for bowel cancer is increasingly common, particularly in the USA, Germany and Poland, but the uptake rates are low.

CT colography

Major advances in imaging technology, including computer tomography (CT) and magnetic resonance imaging (MRI),

coupled with the development of image processing software, have opened the way for virtual coloscopy. This ultra-modern, minimally invasive technique makes it possible to obtain a two or three-dimensional reconstruction of the bowel from a CT or MRI scan. MRI colography is currently at an earlier stage of development than CT colography. By 'unfolding' the bowel in this way, it is possible to identify polyps developing in the bowel. Colography can be used to select abnormalities on the basis of size. This is significant, because the larger a polyp is, the more likely it is to develop into cancer. If polyps of more than a certain size are detected, the patient is referred for coloscopy, so that the abnormalities can be investigated further and removed. However, this means that coloscopy is provided only to a particular subgroup of participants. CT colography is almost as reliable as coloscopy as a means of detecting colon cancer and 'large' adenomas (≥ 10 millimetres across).

CT colography and coloscopy compared

On 30 September 2008, the Minister of Health, Welfare and Sport asked the Health Council for advice in connection with a permit application submitted jointly by the Amsterdam University Medical Center and the Erasmus Medical Center in Rotterdam. The application related to a trial to be organised on the basis of pre-randomisation: the so-called COCOS (Colonoscopy or Colonography for Screening) Trial. The object of the proposed trial was to compare (optical) coloscopy with CT colography, in order to determine their relative merits as primary screening methods in terms of take-up and yield (advanced adenomas and colon cancers detected).

COCOS was not intended to study the effectiveness of these forms of screening for colon cancer. The study was scheduled to run for two and a half years.

NordICC Trial

On 25 November 2008, the research group asked for permission to add a control group to the project. This would allow the coloscopy element of the study to form part of an international randomised screening trial, known as the NordICC Trial. NordICC is the first trial to compare one-off screening with coloscopy in conjunction with usual care, in order to determine the effect of each form of screening (and the associated intervention) on colon cancer mortality.

On 15 April 2009, the WBO Committee conditionally recommended allowing the project to go ahead. Two weeks later, the Minister of VWS issued a permit, in line with the Council's advice.

New forms of foetal therapy make difficult decisions necessary

Dr. W.J. Dondorp was a member of the Health Council's scientific staff.

Modern ultrasound techniques make it possible to detect many foetal abnormalities and illnesses before birth. Some can be corrected or treated while the baby is still in the womb. Last year, the Health Council published a survey of developments in medical science in this field, entitled *Fetal therapy. Update on the current level of knowledge*. To supplement that report, the Minister of Health, Welfare and Sport was presented with a horizon scanning report on the ethical and legal aspects of foetal therapy on 23 March 2009.

The increasing scope for treating a foetus in the womb raises questions about the responsibilities of doctors and other prenatal care providers, and of the expectant mother herself. The health interests of the unborn child should be to the fore. Many foetal therapies are currently experimental. With such therapies – including those that are now accepted forms of treatment – it is often necessary to make decisions on the basis of uncertainty. In its report, the Council therefore calls for careful reflection on how counselling can best be provided. In some cases, intrusive and directive counselling is morally defensible, as for example in the case of a pregnant woman who seriously disadvantages her unborn child by declining recommended foetal treatment that could protect the child against serious, irreversible harm without placing her at serious risk.

There is debate regarding the legality of forcing or pressing a pregnant woman into a given course of action. Foetal therapy is inherently problematic, because treatment always has to be provided through the physical intermediation of the mother. The Council's report emphasises the need for further debate regarding the extent to which the law can take account of an unborn child's interest in good health and what that implies for the acceptability of pressure and compulsion.

Finally, the report highlights three things that the Council regards as vital for the responsible further development of foetal therapy: a central, uniform register of procedures; scientific evaluation by means of well-designed prospective comparative research; and long-term follow-up.

The report *Caring for the Unborn Child* was drawn up under the auspices of the Health Council's Standing Committee on Medical Ethics and Medical Law.

Two new advisory reports on the Population Screening Act

W.A. van Veen is a member of the Health Council's scientific staff.

In accordance with the provisions of the Population Screening Act (WBO), the Minister of Health, Welfare and Sport is consulting the Health Council before deciding whether to grant or revoke permission for a population screening study that would be subject to a mandatory permit. The resulting advisory role is carried out by the Health Council's Committee on the Population Screening Act (WBO Committee), which was established in 1995. On February 23, the Health Council submitted two advisory reports to the Minister of Health, Welfare and Sport. One report favoured the IMPACT study while the other recommended that the Health Risk Test not be pursued.

Prostate cancer screening in families with a history of breast cancer

Men with a mutation in the breast cancer genes BRCA1 or BRCA2 have an increased chance of developing prostate cancer, indeed they are likely to develop a particularly aggressive form of the disease. This does not automatically mean that the screening of mutation carriers would be a useful exercise, but this possibility is certainly worth investigating. After all, the risk- benefit ratio of screening may be different for high risk groups than for the general population. The limited research that has been carried out in this field to date is highly fragmented in nature.

On February 23, 2009, the Health Council's Committee on the Population Screening Act (WBO Committee) informed the Health Minister of Health, Welfare and Sport that it was in favour of a permit request by the Leiden University Medical Center and the University Medical Center St. Radboud in Nijmegen. The applicants wish to join an international study known as IMPACT

(Identification of Men with a genetic predisposition to Prostate Cancer: Targeted screening in BRCA1/2 mutation carriers and controls). IMPACT was launched by the British Institute of Cancer Research in Sutton. Its goal is to accurately assess the risk of prostate cancer in carriers, and to learn more about the usefulness of screening carriers. To this end, the study compares proven carriers with proven non-carriers. Thanks to the registry maintained at Leiden by the Netherlands Foundation for the Detection of Hereditary Tumours (StOET), the Netherlands is in a position to make a major contribution to IMPACT. Two new urine tests are being run in parallel to the standard screening method (the PSA test), in order to assess their performance in practice.

The Health Risk Test

On 27 November 2008, the Minister of Health Welfare and Sport requested the Health Council's advice concerning an application for a permit to conduct a study into the provision of the Health Risk Test in sixteen GP's practices. The Health Risk Test involves the use of an interactive Internet questionnaire. Participants can use this to determine whether they are at increased risk of developing certain diseases and whether there are grounds for further testing. This type of multi-stage screening is still in the test phase. It currently incorporates twenty-eight disorders and five lifestyle modules. The Committee on the Population Screening Act (WBO Committee) published its advisory report on 23 February, 2009. It notes that, in addition to population screening that would be subject to a mandatory permit, the project described in the application also involves scientific research. The Committee's judgement is that, in the project's current form, those components for which a permit is mandatory do not meet the legal requirement of scientific validity. This is one of the criteria which, if not met, will result in the refusal to issue a permit. For this reason, the Committee has advised the Minister not to grant the requested permit.

The termination of direct state involvement with radiotherapy does offer a number of opportunities, provided that quality is safeguarded

A.A. Talmon, MA is an editor at the Health Council.

Radiotherapy in the Netherlands was, for many years, regulated by the state on the basis of a permit system for radiotherapeutic centres (in accordance with the provisions of the Special Medical Procedures Act (WBMV)). The Minister of Health, Welfare and Sport, has now asked the Health Council whether there are any substantial arguments against the termination of this direct state involvement with radiotherapy, or whether this form of care could, sooner or later, be removed from the Special Medical Procedures Act. After analysing the advantages and drawbacks of both options, the Health Council has concluded that it would be three to four years at the earliest before the ties with the Special Medical Procedures Act could be severed. This would be subject to the provision that the safety, quality and efficiency of radiotherapy must continue to be guaranteed. The Health Council has also advised the Minister to give priority to the requisite expansion of radiotherapy capacity in the period up to 2015. To this end, efforts must first be made to update the current Radiotherapy Planning Decree (which dates from the year 2000). The above recommendations were contained in an advisory report that the Health Council presented to the Minister of Health, Welfare and Sport on 18 December, 2008.

The Dutch Society for Radiotherapy and Oncology has calculated that, over the next few years, the number of cancer patients requiring radiation treatment will increase from 45 000 (reference date 2005) to almost 60 000 (in 2015). This rise in patient numbers will inevitably boost the requirement for additional staff and equipment in Radiology departments throughout the country. The Health Council takes the view that it is absolutely essential to tackle this expansion of capacity efficiently and in good time. Only in this way can we maintain the current high level of radiotherapy in the Netherlands, while avoiding the re-emergence of long waiting lists.

There is no simple 'yes' or 'no' answer to the question posed by the Minister of Health, Welfare and Sport, about whether it is necessary for the state to continue to direct the provision of radiotherapy on the basis of the Special Medical Procedures Act. To date, state regulation by means of the permit system has made a major contribution to the quality and efficiency of radiotherapeutic care in the Netherlands. Since the year 2000, this same system has made it possible to successfully make up ground in terms of correcting the shortfall in capacity and of cutting waiting lists. At the international level, the Dutch method of regulation and concentration is much admired. This is reflected by the fact that a number of foreign countries have followed our example in this regard.

The Health Council is confident that there will be ample opportunity for radiotherapy to continue its successful development even if it is withdrawn from the Special Medical Procedures Act. However, another way will have to be found to ensure that both national planning and the coordination between regional centres are maintained. In addition, strict supervision of the safety and quality of care will have to be continued. It is vital that such a costly and complex amenity as radiotherapy is used efficiently.

To ensure the proper management of a possible withdrawal from the Special Medical Procedures Act, the relevant parties (the professional groups involved, the Netherlands Health Care Inspectorate, health insurers, hospital administrators, and patient associations) must have an accreditation system and clearly defined powers with which to assess the quality of the various centres (before, during and after the expansion of their facilities). A transitional period of three to four years will be needed to set up a comprehensive quality system of this kind. The Health Council maintains that, throughout this period, radiotherapy should continue to be covered by the Special Medical Procedures Act. Proton therapy is still at an early stage of development, so a separate procedure is needed to set up facilities for this new form of radiotherapy. Use of the Special Medical Procedures Act provides a sound basis for the effective introduction of proton therapy in the Netherlands.

Advisory letter on Q fever

Dr. K. Groeneveld is a member of the Health Council's scientific staff.

On 17 December 2008, the Council's President, Professor André Knottnerus, sent an advisory letter concerning Q fever in the Netherlands, to Ab Klink, the Minister of Public Health, Welfare and Sport. Q fever is an infectious disease that can occur if the bacterium *Coxiella burnetii* is transmitted to humans (mainly by sheep and goats). In 2008, there were numerous reported cases of Q fever in the Netherlands, particularly in the province of North Brabant. The letter was prompted by the findings of an international round-table conference on this subject, which was held in the summer of 2008, under the leadership of President Knottnerus. The main conclusions reached by the experts from Canada, Denmark, Germany, France, the Netherlands and Sweden who attended this conference are outlined in the President's letter.

Q fever

Q fever is a zoonosis caused by the bacterium *Coxiella burnetii* (*C. burnetii*). The animal reservoir from which people become infected consists mainly of sheep, goats and cattle. Infections in animals are usually asymptomatic. *C. burnetii* can be transmitted in these animals' milk, urine or faeces, but the main route is via amniotic fluid and placental material. Even if people do acquire the infection, it is by no means certain that they will go on to develop the disease. In those who do get the disease, this can take the form of chronic Q fever or acute Q fever. The former more often affects pregnant women and people with an underlying disorder, such as a defective heart valve. There is some evidence that the occurrence of Q fever during pregnancy can lead to premature birth, abortion and neonatal mortality. This could occur if a pregnant woman were to become infected without actually becoming ill. Q fever is treated with antibiotics. Individuals with the chronic form of this disease may have to take this medication

for a very protracted period of time indeed, sometimes even for the rest of their lives.

> There has been an increase in Q fever in the eastern part of the province of North Brabant

Up until 2007, Q fever was a rare disease in the Netherlands, with around twenty cases per annum. That year saw the first outbreak of Q fever in the Netherlands. There were 137 reports of the disease in the region between Tilburg and Arnhem, concentrated around the village of Herpen. In 2008, the number of cases increased to around 950 and the area involved expanded. This may indicate that Q fever has become endemic to this region. The resultant situation raises questions about whether the government can and should take preventive measures to counter Q fever in humans. In France, outbreaks of this disease have led to the screening of asymptomatic pregnant women for *C. burnetii* infections and to the temporary or permanent exclusion of blood donors from the affected region.

> No screening of potentially infected asymptomatic pregnant women

For various reasons, it does not seem appropriate to screen asymptomatic pregnant women for *C. burnetii* infections at the present time. One reason is that very little research data is available on the risk of complications in pregnant women with an asymptomatic infection. Furthermore, it is not entirely clear what screening method should be used when carrying out tests in this region, which is home to 1.5 million people. Finally, too little is known about the effects of treating women for Q fever during pregnancy, or about the associated safety issues. Various groups outside the Netherlands have highlighted co-trimoxazole as the drug of choice. However, the Dutch Health Care Insurance Board states that while there is insufficient data on its use during pregnancy in humans to assess its potential harmfulness, studies in experimental animals have shown this drug to be harmful.

The temporary exclusion of blood donors is not indicated

With regard to the Netherlands, the temporary or permanent exclusion of blood donors from the affected region is not considered expedient at the present time. The scientific literature describes only a single case of the transmission of Q fever by blood transfusion, in an article published in 1977. Accordingly, in view of the existing safety measures, the risk that this disease could be transmitted by means of blood transfusions is negligible. Given the sheer size of the affected area, the exclusion of donors could also pose practical problems.

Many questions still remain to be answered

There are still many gaps in our knowledge, not only about Q fever in general, but also about the exact causes of this disease in the Netherlands. In the field of veterinary medicine too, there are many questions still to be answered about the Dutch outbreak of Q fever. For instance, it is not known why Q fever affects only a few of the goat farms in the region, nor how *C. burnetii* is transmitted in goats. The option of vaccinating animals, which was discussed during the conference, has now been put into practice.

Health Research

The Advisory Council on Health Research advises on the Netherlands Organisation for Health Research and Development's prevention programme

Dr. J.N.D. de Neeling is a member of the Health Council/ the Advisory Council on Health Research's scientific staff.

On 12 February 2009, the Advisory Council on Health Research (RGO) sent an advisory letter to the Minister of Health, Welfare and Sport concerning the fourth prevention programme. The Advisory Council on Health Research is responding to a letter of June 2008, in which the Minister charged the Netherlands Organisation for Health Research and Development (ZonMw) with the task of preparing a new edition of the prevention programme. The Council endorses the principles and themes that the Minister set out for the Netherlands Organisation for Health Research and Development (ZonMw) in his letter. It goes on to formulate 'some additional views' on four specific topics.

The Council first considers what the Minister refers to as 'translational prevention research': this is innovative research that expands on basic research identifying potential targets for preventive interventions, and which is aimed at finding the proof-of-concept in a preventive setting. While such translational research may derive from fundamental biomedical research, it could also stem from social and behavioural research. In the Council's view, that part of the fourth prevention programme that is aimed at translational preventive research should have an open nature. The assessment and selection of research proposals should be subject to three criteria: their translational nature, their innovative nature, and their scientific quality.

The importance of methodological innovation is the second issue to be dealt with. The Council feels that current methods for demonstrating whether preventive interventions are successful are sometimes less than adequate, as are those used to identify the

causes of success or failure. Methodological innovation is useful when evaluating complex interventions in a complex environment, for example, or in interventions that are only expected to generate minor effects, and in research into the effectiveness and efficiency of promising, temporarily introduced interventions.

A large part of the letter – the third topic - is devoted to medical research in human subjects who have no health problems, i.e. screening. According to the Advisory Council on Health Research, the key problem here is the risk that exclusive attention will be paid to the effects of various forms of screening (life extension, health gains, information on health risks), while the unintended (but no less real) effects (unnecessary diagnostic processes and interventions , health hazards, unnecessary anxiety, unwarranted reassurance, unnecessary health care costs) either go unnoticed or fade into the background. The thrust of Minister Klink's policy is to safeguard quality and safety, thereby maintaining a balance between people's autonomy on the one hand (as they must be free to opt for screening) and protecting them against the risks of screening on the other. In keeping with previous advisory reports from the Health Council and the Council for Public Health and Health Care, the Advisory Council on Health Research envisages a number of ways in which the fourth prevention programme can contribute to the success of this policy. This could include the development and testing of potentially valuable forms of screening, and of effective educational methods and means of disseminating information. Other avenues would involve an analysis of the ethical and legal aspects of screening, the monitoring of developments in the screening market, and the multi-disciplinary guidelines for screening.

The fourth and final topic raised by the Council is whether or not a systematic review of the results of the prevention programme would be useful. Over the course of ten years, the prevention programme organised by the Netherlands Organisation for Health Research and Development (ZonMw) has generated about 550 projects. These projects differed substantially in terms of their

scope and content, and enjoyed varying degrees of success. Together, they provide a unique opportunity to find out which factors promote or obstruct the successful conclusion and influence (in both the scientific and social senses) of prevention projects. The Council considers an understanding of these factors to be of great importance in terms of the content of the fourth edition (and any subsequent editions) of the prevention programme. In its advisory letter, the Council gives a broad description of the research that is needed to make effective use of this knowledge.

Food and nutrition

Extra vitamins desirable only for certain at-risk groups

A.A. Talmon, MA is an editor at the Health Council.

European legislation and regulations on micronutrients (vitamins, minerals and trace elements) are currently undergoing rapid development. The main aims of the authorities are to ensure that people get enough of these substances, while also minimising the risk of some people consuming more than the safe upper limits for the various micronutrients. According to the Health Council's Micronutrients Committee, a varied diet, as described in the *Guidelines for a Healthy Diet*, is sufficient to provide the general, healthy population with ample micronutrients. Dietary suppletion or food enrichment is, in the Committee's view, desirable only in cases where there is a clear health benefit. Hence, extra folic acid or extra vitamin D, K or B_{12} is needed only by certain at-risk groups, and even then only in addition to a normal varied diet. These are the main conclusions of the Health Council's fifth report on micronutrients, which was submitted to the Minister of Health, Welfare and Sport on 27 May.

Seek to improve the health of particular groups

The latest report is the last in a series, in the context of which the Council has already advised the minister on folic acid, iodine and vitamins A and D. From the four earlier reports, it is apparent that there is no standard approach that can be used to select the most appropriate strategy for regulating intake of a particular micronutrient. Each of the micronutrients evaluated by the Council is unique in terms of the pattern of insufficient or excessive intake, and in terms of the associated risks for various population groups. Nevertheless, when considering possible measures, it is possible to follow a particular sequence of steps, in relation to which eating habits that conform to the *Guidelines for a Healthy*

Diet must always be the point of departure – at least for the general population. Where certain at-risk groups are concerned, suppletion of the four micronutrients is advisable: women can benefit from extra folic acid around the time of conception; extra vitamin D is good for young children, people who spend little time out of doors or have dark skin, pregnant or breastfeeding women, women who wear a veil, women above the age of fifty and men above the age of seventy; extra vitamin K is appropriate for newborn babies; and extra vitamin B_{12} is needed by vegans.

Prevent excessive intake

To prevent some people consuming micronutrients in excessive quantities, it is desirable that normal consumption of supplements and enriched foods should not provide more than once the recommended daily amount of any given micronutrient, in addition to what the consumer may be obtaining from his or her ordinary food. Consuming more than the recommended daily amount provides no health benefit, and consuming more than the maximum safe amount can be harmful. The Committee therefore recommends continuous evaluation of micronutrient intakes. To this end, a system is needed to monitor the composition and consumption of enriched foods.

The prioritisation of further research

The Committee wishes to see further research into: micronutrient intake among people of Turkish, Moroccan or Surinamese origin; the potential adverse health effects of low iron levels in pregnant and non-pregnant women of child-bearing age; and maximum safe micronutrient intake levels for children (about which little is known).

A varied diet is all that is needed for an adequate vitamin A intake

Dr. P. Slot was an editor at the Health Council.

A good and varied dietary pattern provides us with all the vitamin A that we need. By this means we get enough, but not too much. Smokers who take supplements containing high doses of beta-carotene (a building block used by the body to make vitamin A) may ingest too much, as research has found a relationship between beta-carotene supplements and an elevated risk of lung cancer in this group. The previous recommendation that pregnant women should avoid vitamin A supplements, liver and liver products still stands. This is because their intake levels might otherwise be high enough to harm their foetus. The Health Council stated this in an advisory report that was submitted to the Minister of Health, Welfare and Sport on 16 December 2008.

Neither too little nor too much

An adequate vitamin A intake is important for reproduction, growth and development, and for immunity to disease. The vitamin is also important for good vision at low light levels. But what about that old axiom, 'the more, the merrier'? An excess of vitamin A can cause damage, especially to the foetus and to the liver.

The importance of a varied dietary pattern

How do you achieve an ideal intake level? On the basis of current scientific knowledge, the Health Council concludes that a varied and adequate diet should be sufficient for this purpose. Vitamin A occurs in animal products (which naturally contain this substance), in dark green leafy vegetables, and certain types of yellow and orange vegetables and fruits (which contain substances, such as

beta-carotene, that the body converts into vitamin A), as well as in ordinary margarine, low-fat margarine and products used in baking and frying (because these contain added vitamin A). With dietary patterns of this kind, supplements are unnecessary and can even be harmful in high doses. Research has shown that this is particularly true of smokers who take beta-carotene supplements.

Additional recommendations based on research

It is not yet possible to say whether further recommendations are needed. A lack of hard data means that the adequacy of the currently recommended intake level is still, to some extent, a matter of debate. Further research is needed to decide this issue, and to identify possible health effects.

Health and Environment

Advisory letter Power lines and Alzheimer's disease

Dr. E. vanRongen is a member of the Health Council's scientific staff.

A recent Swiss study has shown an approximate doubling of mortality with Alzheimer's as primary or secondary cause of death in subjects that had lived for more than 10 years within a distance of 50 m from a power line. Prolonged exposure to the magnetic fields generated by the power lines might be the cause of this. In an advisory letter to the Minister of Public Housing, Spatial Planning and the Environment, the Electromagnetic Fields Committee of the Health Council writes, however, that on the basis of this study and other epidemiological data it cannot draw conclusions on a possible causal relationship. The Committee does feel that the results of the Swiss study, in combination with the data from occupational studies, require further research. This should be epidemiological studies as well as investigations into a possible mechanism.

Suspected exposure to electromagnetic fields associated with health problems

A.A. Talmon, MA is an editor at the Health Council.

Considerable international concern exists about the possible health effects of exposure to electromagnetic fields generated by the increasing number of sources in the home and the workplace. The Health Council's Electromagnetic Fields Committee, which monitors scientific developments in this field, published its fifth *Annual Update* on 19 March 2009. This report concluded that no authoritative study has yet yielded evidence of health problems brought about by exposure to radiofrequency fields in the domestic environment (most of which are generated by mobile phone systems and wireless computer networks). However, a link has been demonstrated between perceived health problems and believing that one has been exposed to electromagnetic fields.

Does using a mobile phone affect brain activity?

In recent years, there has been a great deal of research into the effect that using a mobile phone may have on brain function. This research has looked at certain phenomena, such as electrical activity in the brain, and at more integrated indicators, such as memory, attention and concentration.

Some studies have detected subtle changes in natural electrical processes and local blood flows in the brain in people exposed to electromagnetic fields generated by mobile phones. The observed phenomena are minor and temporary and – as far as can be ascertained – not significant for health.

No clear picture has emerged from the studies that have looked for possible effects on memory, attention and concentration. In some studies, minor irreversible changes have been detected, while others have found no evidence of any influence. Nor has anything been discovered to indicate the existence of a link between exposure to electromagnetic fields and

hearing loss and balance problems.

Furthermore, the effects that have been observed have all been associated with levels of exposure higher than those normally generated in the domestic environment by the antennas of base stations or wireless computer networks.

Electromagnetic fields and health problems

A possible link between exposure to radiofrequency electromagnetic fields and health problems has been investigated both in the everyday environment and in the laboratory. A number of the studies concerned were flawed and their findings therefore unreliable. The picture that emerges from the reliable study findings is that there is no causal relationship between exposure and the occurrence of health problems (such as headaches, migraine, fatigue, insomnia, concentration problems, itching and sensations of heat). However, a link has been discerned between health problems and believing that one has been exposed. People who suspect they have suffered exposure are more likely to report problems such as those listed above than people who do not have any such suspicion.

Government response to the report *Prudent Precaution*

Dr. H.F.G. van Dijk is a member of the Health Council's scientific staff.

Last autumn, the Health Council presented its report *Prudent Precaution* to the Minister of Housing, Spatial Planning and the Environment (VROM). On 2 April this year, the Minister of VROM (acting partly on behalf of nine other ministers) presented a written statement to the Lower House of the Dutch Parliament explaining in detail what action the government intended to take in light of the report. In the same statement, the Minister also responded to another 2008 report with a related theme: *Uncertain Safety*, published by the Scientific Council for Government Policy (WRR).

The government observed that there was agreement between the two reports on numerous points, but also a number of differences. The two councils defined the precautionary principle in different ways, for example. The Minister indicated that the government shared the Health Council's interpretation that the precautionary principle implied a strategy for dealing with uncertainty in an alert, careful, reasonable and transparent manner tailored to the particular circumstances. The government felt that there was little to be gained from enshrining the principle in general law, as explicitly recommended by the WRR.

Both reports are considered by the government to support continued application of the classic policy for dealing with simple or complex but quantifiable risks, and to provide valuable assistance in dealing with risks that are characterised by a high degree of uncertainty. The reports challenge the government to learn to accommodate uncertainties and to make appropriate allowance for them in its decision-making. Furthermore, it is important that the government arrives at its decisions by transparent processes. It should be made clear where scientific consensus exists and where it does not, and the boundaries of the responsibilities of actors within the community need to be defined.

According to the ministers, the Health Council and WRR reports recognise that the approach to risk is currently undergoing a transition, from the classic approach (as described in the policy document *Dealing with Risk*, 1989) to a more modern approach (as described in the policy document *Dealing Sensibly with Risk*, 2004 and 2006). The two reports are perceived to be in line with this trend. The government therefore intends to continue the established policy, believing that the precautionary approach recommended by the two councils can contribute to the achievement of an optimal balance between dynamism and caution.

Health in the workplace

Possible reprotoxic effects of ammonia and aluminium investigated

J.T.J. Stouten, M.Sc is a member of the Health Council's scientific staff.

On 28 May 2009, the Minister of Social Affairs and Employment was presented with two reports in which the Health Council addressed the implications of exposure to ammonia and to aluminium (including aluminium compounds) for fertility and for the development of offspring. The findings of the Subcommittee on the Classification of Reproduction Toxic Substances are formulated using the terminology defined by the European Union and serve as the starting point for the statutory classification of substances as reprotoxic.

Ammonia

Ammonia is used mainly as fertiliser (or for the synthesis of ammonium salts, which are used as fertiliser); it is also used in the manufacture of fibres, plastics and explosives, as a refrigerant and as an ingredient of smelling salts and cleaning products.

It is not yet possible to say whether exposure to ammonia has an adverse effect on fertility. The Health Council therefore advises against classifying ammonia on the basis of either the criterion 'effects on fertility' or the criterion 'effects on development'.

Aluminium and aluminium compounds

Aluminium is widely used in various fields, including metallurgy, transport and construction. Aluminium compounds are also in widespread use for purposes such as the manufacture of medicinal and cosmetic products.

Not enough is yet know to draw any conclusions regarding the effects on fertility of exposure to metallic aluminium or alumi-

nium compounds that do not dissolve in water. The Health Council therefore advises against classifying metallic aluminium or insoluble aluminium compounds on the basis of either the criterion 'effects on fertility' or the criterion 'effects on development'.

Similarly, not enough is yet known to say whether exposure to aluminium compounds that do dissolve in water can adversely affect fertility. The Health Council therefore advises against classifying soluble aluminium compounds on the basis of the criterion 'effects on fertility'.

However, there is sufficient evidence to support the hypothesis that exposure to soluble aluminium compounds can give rise to developmental abnormalities in the offspring of an exposed individual. The Health Council therefore recommends that soluble aluminium compounds be placed in category 2 ('substances which should be regarded as harmful to human development').

The two reports were compiled by the Health Council's Subcommittee on the Classification of Reproduction Toxic Substances.

Health-based recommended exposure limits for exposure to gamma butyrolactone in the workplace

Dr. J.M. Rijnkels is a member of the Health Council's scientific staff.

Gamma Butyrolactone (GBL) is an oily substance that is used as a solvent or ingredient in various branches of industry, for example in the production of polymers (electronics industry), and chemical paint removers, as well as vitamins and medicinal products. In order to adequately protect workers who inhale gamma butyrolactone against possible adverse effects, an investigation was carried out to identify the level of exposure that can result in health impairment. This work has resulted in recommendations for two health-based recommended exposure limits, and a skin notation. The Health Council stated this in an advisory report that was submitted to the Minister of Social Affairs and Employment on 18 December 2008.

Gamma Butyrolactone (GBL) and its hydrolysis product, gamma-Hydroxybutyric acid (GHB) are both used by young people as party drugs. This has led to a few cases of acute poisoning. The ingestion of GBL/GHB can result in the following symptoms: drowsiness, seizures and uncontrolled movements, loss of consciousness, confusion, nausea and impaired breathing. Repeated use can lead to insomnia, anxiety and depression. There are no known cases of poisoning from occupational exposure. Experimental animal research shows similar acute effects, but when exposure was prolonged the effects declined or even disappeared altogether in the course of the study.

In view of the acute adverse effects involved, the Health Council has set a concentration limit for airborne concentrations of GBL at which no adverse health effects would be expected to occur. The target group consists of workers whose occupation causes them to be exposed to this substance. This result was subsequently translated into two safe health-based limit values, one for a fifteen-

minute period of work and the other for an eight-hour period of work. These values are 65 and 10 milligrams of GBL per cubic meter of air respectively.

Since the skin is highly permeable to GBL, the Health Council recommends the use of a supplementary skin notation, which means that GBL is designated as 'hazardous in contact with the skin'. With substances of this kind, employers are required to take measures to prevent exposure via the skin.

Available reports translated integrally into English

Reports can be downloaded from the website www.healthcouncil.nl or ordered from the Health Council of the Netherlands, PO Box 16052, 2500 BB The Hague, telephone (+31)70 3407520, fax: (+31)703407523, e-mail: network@gr.nl.

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NETWORK # 1,
VOLUME 24
JANUARY - JUNE

NETWORK
is published by the Health Council
of the Netherlands

Editor
A Wijbenga

Desktop Publishing
M. Javanmardi, J. van Kan

Basic-design
N. Hoppe, Rotterdam

Address
Health Council of the Netherlands
PO Box 16052
2500 BB The Hague
The Netherlands
Telephone (+31)70 340 75 20
Telefax (+31)70 340 75 23
E-mail: network@gr.nl
Internet - www.healthcouncil.nl

ISSN 1571-9618