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HEALTH AND SAFETY COMMISSION

PUBLICATION OF RESEARCH ON SHIFTWORK AND BREAST CANCER

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Cleared by Sandra Caldwell on 8th July 2003

Issue

1. To advise the Commission of the forthcoming publication on 15th July 2003 of a research report on the relationship between shift work and breast cancer.

Timing

2. Immediate

Recommendation

3. The Commission is invited to note the publication of the research report.

Background

4. HSE commissioned this research following an earlier investigation into the possible occurrence of work related cancers and the publication of two articles in the Journal of the National Cancer Institute in the United States, which indicated the possibility of a relationship between shiftwork and breast cancer. These articles suggested that an effect of altered light exposure at night on levels of melatonin or other hormones might affect cancer risk. HSE wished to seek an expert view of the strength of evidence for a causal relationship between shift work and risk of breast cancer.
5. The research, 'Shiftwork and breast cancer: a critical review of the epidemiological evidence' was undertaken by Professor Anthony Swerdlow, a leading epidemiologist at

the Institute of Cancer Research. Professor Swerdlow looked at four published epidemiological studies which addressed the possible relationship between breast cancer risk and shiftwork. He concluded that: "Overall, the evidence for an association is appreciable, but not definitive" and that "further epidemiological research is needed to clarify the relationship."

Argument

6. The research recommends that there is a need for further studies to clarify the association between shift work and breast cancer, and that the studies need to look at shift and night work in more detail, and also to take account properly of all known and suspected risk factors for breast cancer. HSE has consulted across government, in particular with the Department of Health and the UK Medical Research Council, so that any further research on shiftwork and breast cancer can be properly set alongside other government research on breast cancer. As a consequence, the MRC has agreed to convene a group of national and international scientific and medical experts to advise on how the research agenda should be progressed. The Group's draft terms of reference are:
 - To consider the evidence relating shift work to breast cancer in women and
 - To identify what further research is required and how this might best be taken forward.
7. HSE will publish the results of Professor Swerdlow's research report on 15th July 2003. A copy of the draft Press Release is at Annex 1.

Consultation

8. Colleagues in DWP, DH, MRC, DTI, the Scottish Executive and National Assembly for Wales have been consulted.

Presentation

9. Many factors are known to increase the risk of breast cancer and it is important that we investigate those which might be specifically associated with work activities. We recognise that the possibility of contracting breast cancer is a cause of concern for many women. However, without conclusive research, we cannot offer definitive guidance on possible risks from nightshift work. In these circumstances, our advice to women is to follow NHS guidance on breast awareness.

Financial/Resource Implications for HSE

10. HSE will need to consider in due course the scope for any contribution to cross government research on breast cancer and shiftwork.

Action

11. The Commission is invited to note the publication of the research report.

Annex 1

NEWS RELEASE..... NEWS RELEASE..... NEWS RELEASE..... NEWS
RELEASE

Ref

Date: 15th July 2003

HSE REPORT REVIEWS RESEARCH ON THE RELATIONSHIP BETWEEN SHIFT WORK AND BREAST CANCER

The possibility that shift working can increase the potential for women to contract breast cancer needs further study according to a new research report published by the Health and Safety Executive (HSE).

The research report, 'Shiftwork and breast cancer: a critical review of the epidemiological evidence' was prepared by Professor Anthony Swerdlow, a leading epidemiologist at the Institute of Cancer Research.

HSE commissioned this research following the publication of two articles in the Journal of the National Cancer Institute in the United States, which indicated the possibility of a relationship between shiftwork and breast cancer. These articles suggested that an effect of altered light exposure at night on levels of melatonin or other hormones may affect cancer risk

In his work for HSE, Professor Swerdlow looked at four published epidemiological studies which addressed the possible relationship between breast cancer risk and shiftwork. He concluded that: "Overall, the evidence for an association is appreciable, but not definitive" and that "further epidemiological research is needed to clarify the relationship."

Sandra Caldwell, Co-Director of Policy in HSE said: "Breast disease is a source of anxiety for many women – each year breast cancer is diagnosed in 40,000 women in Great Britain. Many factors are known to increase the risk of breast cancer and it is important that HSE investigates those which might be specifically associated with work activities. However, the genetic, behavioural and environmental risk factors for breast cancer make it particularly difficult to identify how factors like shiftwork, particularly extended nightshift work, may be involved.

"This review suggests that so far epidemiological research is inconclusive about the link between breast cancer risk and shiftwork, if any, and that further research will be necessary to clarify the relation. To take this forward, the UK Medical Research Council will convene a group of national and international scientific and medical experts to advise on how the research agenda should be progressed. Their findings will be widely disseminated.

"Without conclusive research, we cannot develop definitive guidance on the risks from nightshift work. However, we recognise that the possibility of contracting breast cancer is a cause of concern for many women. NHS advice to all women is to be breast aware. They need to know what is normal for them, and tell their doctor without delay if they become aware of any change from normal in their breasts."

Professor Mansel Aylward CB Chief Medical Adviser, Medical Director & Chief Scientist at the Department of Work and Pensions added “We must be very cautious in interpreting the conclusions reached by Professor Swerdlow in his review of the four published studies. The findings have not established that shift work is a cause of breast cancer; the review is inconclusive about any such link. There are many established risk factors for breast cancer. Critical examination of relationships between shift work and breast cancer risk must take account of these known risk factors and whether any of these, rather than shift work itself, contribute to any association. Further research is needed. Most importantly, this review must not deflect women away from avoiding, as best they can, the known risks associated with the development of breast cancer, and must not contribute to the increased anxiety which women already have about breast cancer.”

Copies of Shiftwork and breast cancer: a critical appraisal of the epidemiological evidence. Research Report 132, ISBN 0 7176 2708 X, price £10.00, are available from HSE Books, PO Box 1999, Sudbury, Suffolk, CO10 2WA, tel: 01787-881165 or fax: 01787-313995. Priced publications are also available from good booksellers.

HSE's Research Reports are available in full and free of charge on the HSE website at www.hse.gov.uk/research/rrhtm/

Notes to Editors

1. The idea that shiftwork might influence breast cancer risk derives from a hypothesis put forward in 1987 that light exposure at night might affect breast cancer risk by a hormonal mechanism.
2. The findings on the relationship of shiftwork to breast cancer risk need to be interpreted in view of the knowledge of existing and suspected risk factors for breast cancer. A major complication in assessing the shiftwork literature is the possibility that shiftwork might be a surrogate for one or more established risk factors for breast cancer, including genetic, behavioural and environmental factors. Established risk factors include having no children, late age at birth of first child, starting periods early, late age at menopause, hormone replacement therapy, and (large doses of) ionising radiation exposure.
3. Four published studies were identified that directly investigated whether shiftwork is associated with risk of breast cancer. Each has different methodological strengths and each found some statistically significant associations.
4. Professor Anthony Swerdlow, the Institute of Cancer Research, carried out the research. He is Professor of Epidemiology and Director of the Department of Health Cancer Screening Unit at the Institute. Originally educated in Medicine at the Universities of Cambridge and Oxford, Professor Swerdlow holds doctorates in epidemiology from Glasgow and Oxford Universities, is a Fellow of the Faculty of Public Health Medicine of the Royal College of Physicians, and is a Fellow of the Academy of Medical Sciences.
- 5 The UK Medical Research Council (MRC) promotes research into all areas of medical and related science with the aims of improving the health and quality of life of the UK public and contributing to the wealth of the nation. The MRC is funded by the UK Government and receives an annual Grant in aid from Parliament via the Office of Science and Technology, now part of the Department of Trade and Industry. Working through its Council, scientific boards, and committees, the MRC is independent in its choice of which research to support. It does however work in close partnership

with Health Departments, other Research Councils, industry and others to identify and respond to current and future health needs.

6. The draft Terms of Reference of the Expert Advisory Group to be convened by the UK Medical Research Council are:

- To consider the evidence relating shift work to breast cancer in women and
- To identify what further research is required and how this might best be taken forward.

In the light of the Group's report, HSE, MRC and other relevant stakeholders will consider how the report's recommendations might be implemented.

7. Estimates from the Spring 2002 wave of the Labour Force survey suggest that an estimated 1.8 million women in Great Britain usually or sometimes do shift work. Of these, an estimated 400,000 are involved in night work (night shift, continental shift and three-shift working)..

8 In association with Cancer Research UK, NHS Cancer Screening Programmes produce a leaflet giving advice to women on this issue, entitled Be Breast Aware. The leaflet is available in many languages to ensure as many women as possible have the right information. Copies are widely available in GP practices and clinics, and can also be obtained free from the NHS Response Line, 08701 555 45 (Fax: 01623 724524, e-mail: doh@prolog.uk.com).

9. HSE are currently drafting new guidance on shiftwork on which we will be consulting later this year. Some general advice on shiftwork is currently provided on pages 35-37 in chapter 4 of *Reducing error and influencing behaviour* (HSG48).

PUBLIC ENQUIRIES: Call HSE's InfoLine, tel: 08701 545500, or write to: HSE Information Services, Caerphilly Business Park, Caerphilly CF83 3GG.

PRESS ENQUIRIES: Journalists only: Liz Justice 020 7717 6179,
Out of hours 020 7928 8382.
For press review copies telephone 020 7717 6917.