



Reproductive risks incl. endocrine disruptors - gender issues

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His and Hers, ETUI, 9th February 2017



Safety and health at work is everyone's concern. It's good for you. It's good for business.

European Agency for Safety and Health at Work (EU-OSHA)

- A body of the EU
- Established in 1996 in Bilbao, Spain
- To promote a **culture of risk prevention to improve working conditions in Europe**, by providing technical, scientific and economic information to serve the needs of those involved in safety and health at work.
- Tripartite Board bringing together:
 - governments, employers' and workers' organisations
 - the European Commission
- Network of Focal Points



EU-OSHA publications highlighting chemical and biological risks to women Combined exposures!

- ! **Monitoring of cancer risk factors and work-related cancer:** exposures to women overlooked, part-time women excluded from some studies
- **Noise in figures – OSH in figures report**
– highlights exposures in food and textile manufacturing, education, health care and other service professions
- **Combined exposures to noise and ototoxic substances – literature review**
- **Transport sector – OSH in figures report** – highlights overlooked exposures to women in general, in particular women in service tasks (restauration, cleaning)
- **Factsheets on respiratory and skin sensitisers**, highlight exposures in service sectors, health care, etc.
- **Reports on cleaners** – highlight exposures to precarious workers and lack of training and information
- **Report on HORECA and efacts on Dangerous substances in HORECA** – highlights multiple exposures and lack of information

Just published! Women and the ageing workforce

The image shows the cover and content of an 'INFO SHEET' from the European Agency for Safety and Health at Work. The cover features the agency's logo and the title 'Women and the ageing workforce: Implications for Occupational Safety and Health'. The content page is titled 'Women and the ageing workforce: implications for occupational safety and health' and contains several sections of text, including 'Why is gender relevant to the management of age-related OSH and sustainable work?', 'Age-related differences between men and women in the workplace', 'Sex-specific differences between men and women in the workplace', 'Gender-specific differences between men and women in the workplace', and 'Stress and musculoskeletal disorders'. The document is in English (EN) and has an ISSN of 1831-2243.

- sex- and gender-related differences in working conditions throughout the working life;
- long periods in low-level jobs, without career promotion, lead to long-term exposure to hazards;
- support is needed for risk assessments that incorporate the complexities of age and gender;
- labour inspectorates should have clear diversity strategies;
- exposures not covered or occupational causes of disease not registered.

<https://osha.europa.eu/en/tools-and-publications/publications/safer-and-healthier-work-any-age-women-and-ageing-workforce/view>

Women's exposure to dangerous substances remains largely unexplored

Substance	Source	Circumstances	Occupation, task
Pesticides & storage chemicals	Foodstuff Storage Plants Animals	<ul style="list-style-type: none"> • Agriculture and farming • Horticulture • Workers who handle goods from containers and in storage areas 	<ul style="list-style-type: none"> • Farmers & agricultural workers • Gardeners • Retail • Cleaners
Exhaust fumes Diesel exhaust and particles	Exhaust from combustion engine, incl. diesel and other engines on trucks, ships, trains and buses	<ul style="list-style-type: none"> • Unintentional contact when loading and unloading • Maintenance • Refuelling • Parking areas of vehicles 	<ul style="list-style-type: none"> • Maintenance workers • Retail workers • Drivers, delivery and cargo workers • Workers on mission • Transport workers • Emergency workers

Women's exposure to dangerous substances remains largely unexplored

Substance	Source	Circumstances	Occupation, task
Solvents	Cleaning products Fuels Ambient air Paints, inks, glues and varnishes Cosmetics Resins and glues Drugs	Cleaning Dry-cleaning of textiles Printing Laboratory work Handling medication Fabrication of dental and optometric devices	Manufacturing Leather industry Textile industry Cleaners and dry-cleaners Hairdressers Service workers on ships, trains, buses Printing Laboratory work, pharmacists, chemists
Biological and infectious agents	Animals Foodstuffs, perishable goods Insects and other vectors Contact with passengers, patients, clients	Cleaning Contact with foodstuffs Contact with infected clients and goods Contact with animals Cuts and stings Contact with infectious agents when travelling abroad	Farmers and agricultural workers Cleaners Service and maintenance workers Healthcare staff Hairdressers Catering staff Teachers and nursery school workers Retail workers Home care

Chemicals

- **A wide variety of substances:**
 - Metals
 - Solvents
 - Epoxy resins
 - Pesticides
 - Pharmaceuticals, such as cytostatic drugs or anesthetic gases
 - Etc....
- **Combined exposures to several substances likely**
- **Combined exposures with other risk factors**
- **Some chemicals bioaccumulate or damage germ cells**
- **Some substances not considered under REACH, e.g. diesel exhaust, welding fumes**
- **Endocrine disruptors**



Endocrine disruptors

- **Studies investigated associations between exposure to hormone-like substances and effects**
 - **Wide variety of substances suspected EDCs: PAHs, polychlorinated organic compounds, pesticides, phthalates, organic solvents, BPA, brominated flame retardants, metals, parabens, etc.**
 - **Studies suggest that EDCs have non-monotonic responses, which means that the toxic effects may be greater at lower doses than at higher doses**
- **challenge OEL or risk management measures based on DNELs, which are based on the assumption that there is a linear relationship between the level of exposure and the effect.**

Emerging issues identified in research

- **Fertility problems**
- **Increasing incidence of reproductive malformations in newborn boys**
- **Poor semen quality in men**
- **Hormonal cancers, cancers of breast, testicles, prostate, thyroid**
- **More men with testicular cancer**
- **Early puberty in girls**
- **Masculinization of female foetuses and feminization of male foetuses**
- **Transgenerational effects such as propensity to allergy, cancer, behavioural and neurological effects**



Hypospadias in humans



Legislation – specific legislation for reproductive risks only on chemicals and pregnant workers

There is an EU regulatory framework covering substances presenting an occupational risk to reproductive function, this includes:

- The Chemical Agents Directive (CAD)
- The Carcinogens and Mutagens Directive (CMD)
- Registration, Evaluation, Authorisation & restriction of CHemicals (REACH) Regulation

- The Pregnant Workers Directive (PWD)
- The Young Workers Directive
- EU list of occupational diseases - no reproductive disorders.

- The Framework Directive and all its daughter Directives provide a basis for risk assessment and further measures!

The (pre)pregnancy issue – early pregnancy gap

- Most women unaware of pregnancy during the first 4-6 weeks
- Fetus might be particularly sensitive early in pregnancy
- Effects of exposure might be reversible for adults – but irreversible for fetus

Special preventive measures enforced at notification of employer of pregnancy

- Preconceptional counselling
 - Preconceptional removal from work site
- } Help planned pregnancies
Risk of exclusion of women from work and salary
- Austrian model: carry out risk assessment according to pregnant workers
Directive independently of pregnancy, proactive approach – planned measures already when a pregnancy is announced

Gender issues

- **Strong focus of research and prevention on pregnancy and the foetus**
 - **Taboo! Reproduction and the ability to procreate may be perceived as a personal matter by all actors, including employers and authorities**
 - **Men and women may be exposed in non-traditional professions**
-
- **Avoid assumptions of who is exposed and design guidance for a diverse working population.**
 - **Dedicate research resources to other effects relevant to female workers, such as early onset of puberty or the menopause**
 - **Explain the early pregnancy gap and ensure that women workers are aware of their rights and can report their pregnancy in a non-blame, non-discriminatory culture.**
 - **Ensure protective measures related to breastfeeding are implemented and effects of workplace risks on breastfeeding are further elucidated.**



Recommendations for research & prevention

- **Cover male and female reprotoxicity**
- **Cover many more effects, especially cross-generational, functions of the cardiovascular and immune systems, neuroendocrine axis and hepatic and renal functions**
- **Long-term population studies**
- **Approach by occupations (which occupation has which disease)**
- **Link to emerging exposures? (e.g. nanomaterials)**
- **Combined exposures**



Better data needed

- Long-term effects not studied – cover longer time span
- Use data from a variety of sources, e.g. malformations registers, hospital registers, fertility treatment registers, in combination
- Consider parental exposure and exposure histories when assessing reproductive health effects
- Set up data collection systems on emerging risks and alert systems, based on job-exposure profiles
- Use new methodologies such as data mining
- Develop further and apply methods to assess effects on male fertility, epigenetic effects and other long-term effects on the progeny, e.g. propensity to allergies, hormonal and developmental changes

Conclusions – Occupational exposure limits

- OELs often do not cover reproductive risks.
- Make sure that workers understand the limitations of the OELs for the substances they work with.
- Ensure that OELs for endocrine disruptors are reassessed.
- Ensure that more research is conducted on particle and EDC effects at workplaces.
- Follow up any unusual results from health surveillance or concerns that may arise among workers.
- Ensure epidemiological data are taken into account, as most toxicological evaluations are based on animal studies.
- Provide guidance to health services on how to assess risks and identify potential occupational health effects.



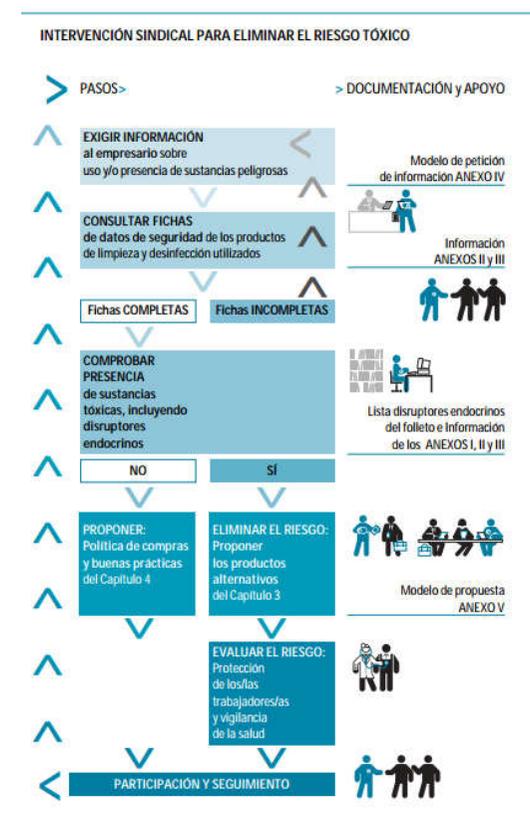
Recommendations for better OSH management

- **OSH management:**
 - Raising awareness of the importance of reproductive risks
 - Make sure that workers understand the limitations of the OELs the chemicals they work with.
- **Support workplace management and awareness-raising**
 - Guidelines for enterprises, labour inspectors and OSH experts
 - Collect good practice cases addressing reproductive risks, to ensure experience is shared.
 - Ensure prevention rapidly follows up on research findings
 - Ensure emerging sectors such as waste management or health professions are covered, and within the sectors consider the range of different professions (e.g. nurses vs. home care).



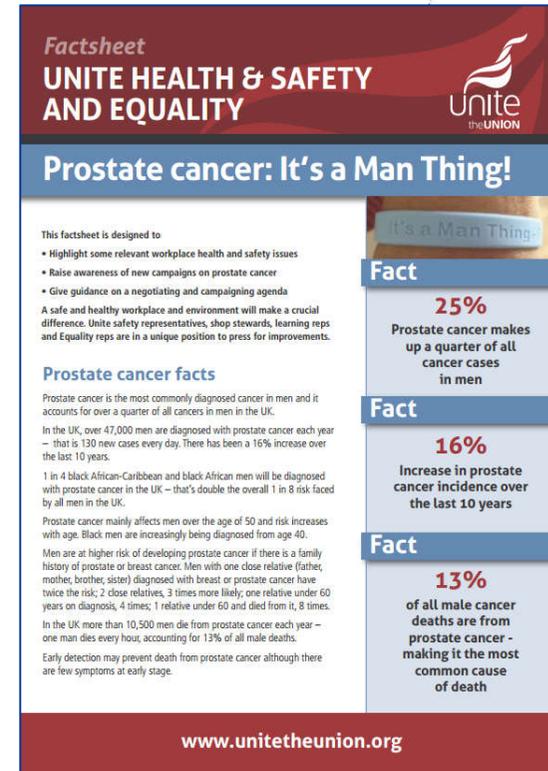
Good practice example – training programme for workers’ reps (Spain) – EU-OSHA GP Award 2003

- Regional Secretariat of CCOO in Aragón
- designed for workers’ ‘prevention delegates’.
- 8,500 enterprises in the cleaning sector in Spain, 246,000 workers, 70% women (2003)
- Over 1,000 delegates took part in the training covering banks, hospitals, factories, local government buildings and private homes.
 - obtaining + analysing information from labels of safety data sheets;
 - risk prevention tools, incl. making proposals for substituting;
 - information about how products work and cleaning processes;
 - presenting proposals to employers
- Financial cost of the training activity was not high
- Workers’ reps develop greater confidence to speak with, negotiate and present proposals to their employers



Good practice example: Promoting a workplace approach to testicular and prostate cancer, United Kingdom

- **Prostate cancer (UK) 36,000 men diagnosed each year and 10,000 deaths. ~250,000 men living with the disease (2005).**
- **Risk prevention activities**
 - farmers, rubber industry workers, exposure to radioactive substances in the nuclear industry
 - contact with chemicals, oil and other substances, through clothing and gloves
 - hygiene is crucial, wash hands before using the toilet to reduce the risk of contamination
 - schedules (for drivers, for instance) should allow for adequate toilet breaks and access to facilities.
- **Workplace representatives are encouraged to negotiate workplace policy with their employers, given guidance.**
 - risk assessment, substituting hazardous substances
 - occupational health provision, e.g. workplace-based National Health Service (NHS) screening facilities and counselling, paid time off for men to have cancer screening;
 - a smoke-free environment, paid time to attend smoking cessation programmes
- **Awareness-raising events, e.g. in such workplaces as British Nuclear Fuels Limited (BNFL), Bombardier and Rolls Royce,**
- **Cooperation with NGOs**
- **Overcome embarrassment men may feel and encourage them to seek medical advice.**



Factsheet
UNITE HEALTH & SAFETY AND EQUALITY
unite the UNION

Prostate cancer: It's a Man Thing!

This factsheet is designed to

- Highlight some relevant workplace health and safety issues
- Raise awareness of new campaigns on prostate cancer
- Give guidance on a negotiating and campaigning agenda

A safe and healthy workplace and environment will make a crucial difference. Unite safety representatives, shop stewards, learning reps and Equality reps are in a unique position to press for improvements.

Prostate cancer facts

Prostate cancer is the most commonly diagnosed cancer in men and it accounts for over a quarter of all cancers in men in the UK.

In the UK, over 47,000 men are diagnosed with prostate cancer each year – that is 130 new cases every day. There has been a 16% increase over the last 10 years.

1 in 4 black African-Caribbean and black African men will be diagnosed with prostate cancer in the UK – that's double the overall 1 in 8 risk faced by all men in the UK.

Prostate cancer mainly affects men over the age of 50 and risk increases with age. Black men are increasingly being diagnosed from age 40.

Men are at higher risk of developing prostate cancer if there is a family history of prostate or breast cancer. Men with one close relative (father, mother, brother, sister) diagnosed with breast or prostate cancer have twice the risk; 2 close relatives, 3 times more likely; one relative under 60 years on diagnosis, 4 times; 1 relative under 60 and died from it, 8 times.

In the UK more than 10,500 men die from prostate cancer each year – one man dies every hour, accounting for 13% of all male deaths.

Early detection may prevent death from prostate cancer although there are few symptoms at early stage.

Fact
25%
Prostate cancer makes up a quarter of all cancer cases in men

Fact
16%
Increase in prostate cancer incidence over the last 10 years

Fact
13%
of all male cancer deaths are from prostate cancer - making it the most common cause of death

www.unitetheunion.org

Guides for reproductive risks

Navy Environmental Health Center
Technical Manual NEHC-TM-OEM 6260.01A April 2006

REPRODUCTIVE AND DEVELOPMENTAL HAZARDS: A GUIDE FOR OCCUPATIONAL HEALTH PROFESSIONALS



NAVY ENVIRONMENTAL HEALTH CENTER
BUREAU OF MEDICINE AND SURGERY

AMERICAN COLLEGE OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE
Improving the care and well being of workers through science and the sharing of knowledge

Public Affairs

Reproductive and Developmental Hazard Management Guidance

26 April 2011

ACOEM Task Force on Reproductive Toxicology

Executive Summary
This guidance document was developed by the American College of Occupational and Environmental Medicine (ACOEM) in order to provide occupational and environmental medicine (OEM) physicians, other health care professionals, labor, and management with a framework for evaluating and managing potential occupational reproductive and developmental health hazards. Several clinical scenarios that may be encountered by OEM professionals are discussed. A multidisciplinary approach may be required to assess each workplace for potential reproductive and developmental hazards and implement appropriate responses for managing such hazards.

Background/Introduction
The magnitude of occupational and environmental reproductive and developmental health risks in modern society is still being studied. Scientific, epidemiological, and toxicological data concerning the reproductive and developmental health risks have been determined for some chemicals, physical agents, and biological agents are limited and in some instances, nonexistent. Consequently, there may be considerable uncertainty about what actions should be taken to adequately manage potential workplace reproductive health hazards.

Industrial exposure limits for most chemical agents promulgated by the Occupational Safety and Health Act (OSH Act), i.e., permissible exposure limits (PELs), or the American Conference of Governmental Industrial Hygienists (ACGIH), i.e., threshold limit values (TLVs), have in most cases been established without considering protection from adverse reproductive or developmental health effects. Therefore, compliance with Occupational Safety and Health Administration (OSHA) exposure limits for many compounds may not ensure protection of reproductive health. Employees have the right to know about potential reproductive health hazards encountered in the workplace and the right to work in an environment that is free of significant reproductive health risks.

Reproductive toxicity is the occurrence of adverse effects on the reproductive system that may result from exposure to toxic or environmental agents. Toxicity includes alterations to the reproductive system and/or the related endocrine

Training for the health sector

Occupational Risks for Children's Health

Children's Health and the Environment
CHEST Training Package for the Health Sector

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