Occupational health and safety: main issues for EU workers
(with a focus on occupational cancers)

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Plan

- Portrait of the EU workforce
- Main work-related health and safety problems
  - Accidents
  - Musculoskeletal disorders (MSDs)
  - Psychosocial risks (PSRs)
  - Chemical risks and occupational cancers
- Occupational cancers
- EU Occupational Safety & Health (OSH) legislation
- EU legislation : marketing of chemicals
- Ongoing EU issue: revision of the Carcinogens Directive
- Conclusions

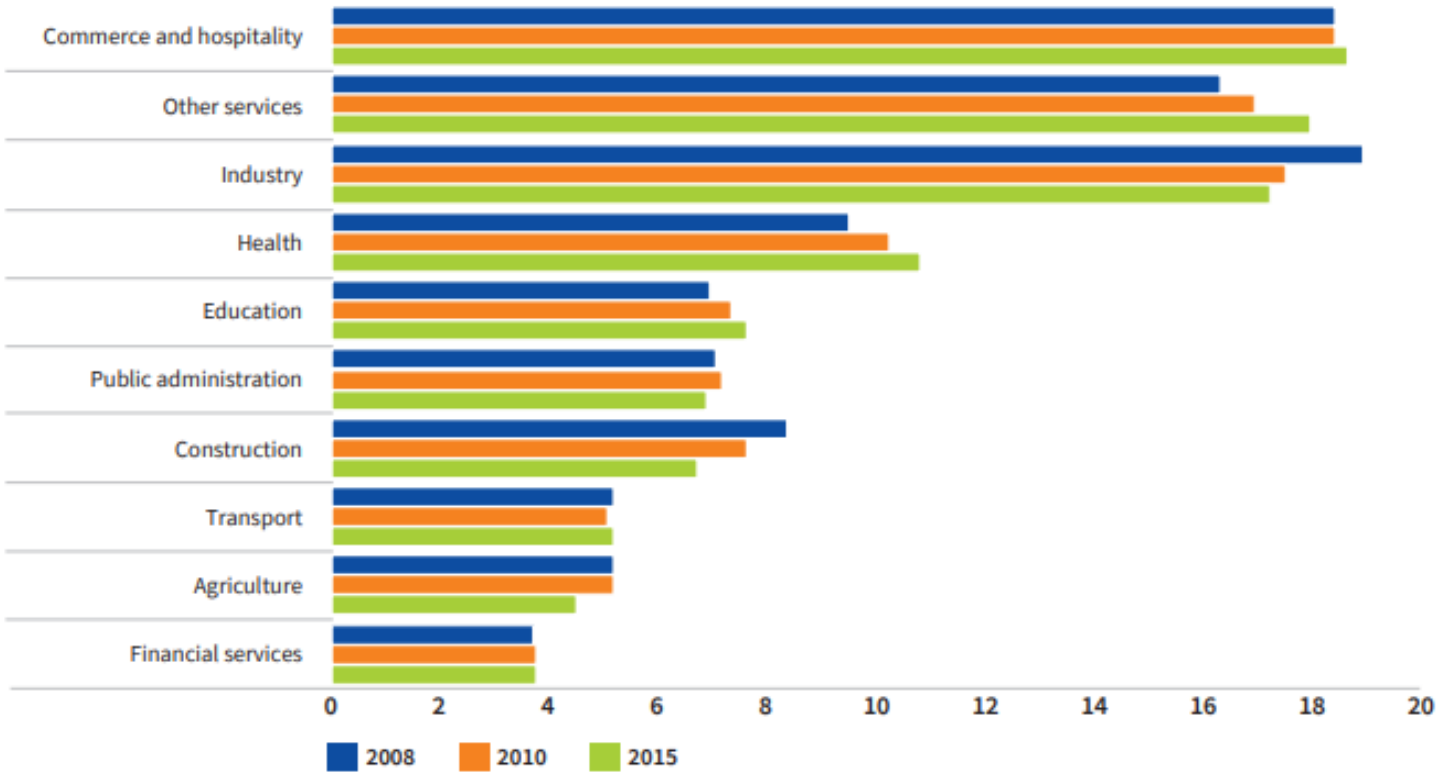
Portrait of the EU workforce (15-64y in 2015)

- 221 million people employed in the EU-28
- employment rate is 66% (71% men; 60% women)
- increased participation of women in the labour market
- gender segregation remains very high
- ageing of the workforce (31% of employed people >50 y)
- rise in part-time employment (33% women & 10 % men)
- indefinite contract (73%), fixed-term contract (12%), other contract types or no contract (8%)
- self-employed : 15 % of the EU workforce
- one-third of workers in the EU work to tight deadlines and at high speed
- one worker in five (22%) works in their free time to meet work demands several times a month.

Source: 6th EWCS, Eurofound, 2017

Portrait of the EU workforce (2008-2015)

Figure 5: Employment by sector, EU28, 2008–2015 (%)



Source: *EU-LFS 2008–2015.*

Source: 6th EWCS, Eurofound, 2017

Some definitions

- accident at work : a discrete occurrence in the course of work which leads to physical or mental harm

- occupational health means the absence of occupational diseases

- occupational disease refers to cases for which the occupational origin has been approved by the national compensation authorities

- recognised occupational diseases :
  - ✓ vary with national legislations and compensation practices
  - ✓ no harmonisation at EU level

- work-related disease includes disease where work played a role

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Main work-related health and safety problems

Accidents at work in the EU-28 (2015)

- over 3.2 million non-fatal accidents that resulted in at least four calendar days of absence from work (ex: wounds and superficial injuries; dislocations, etc.)

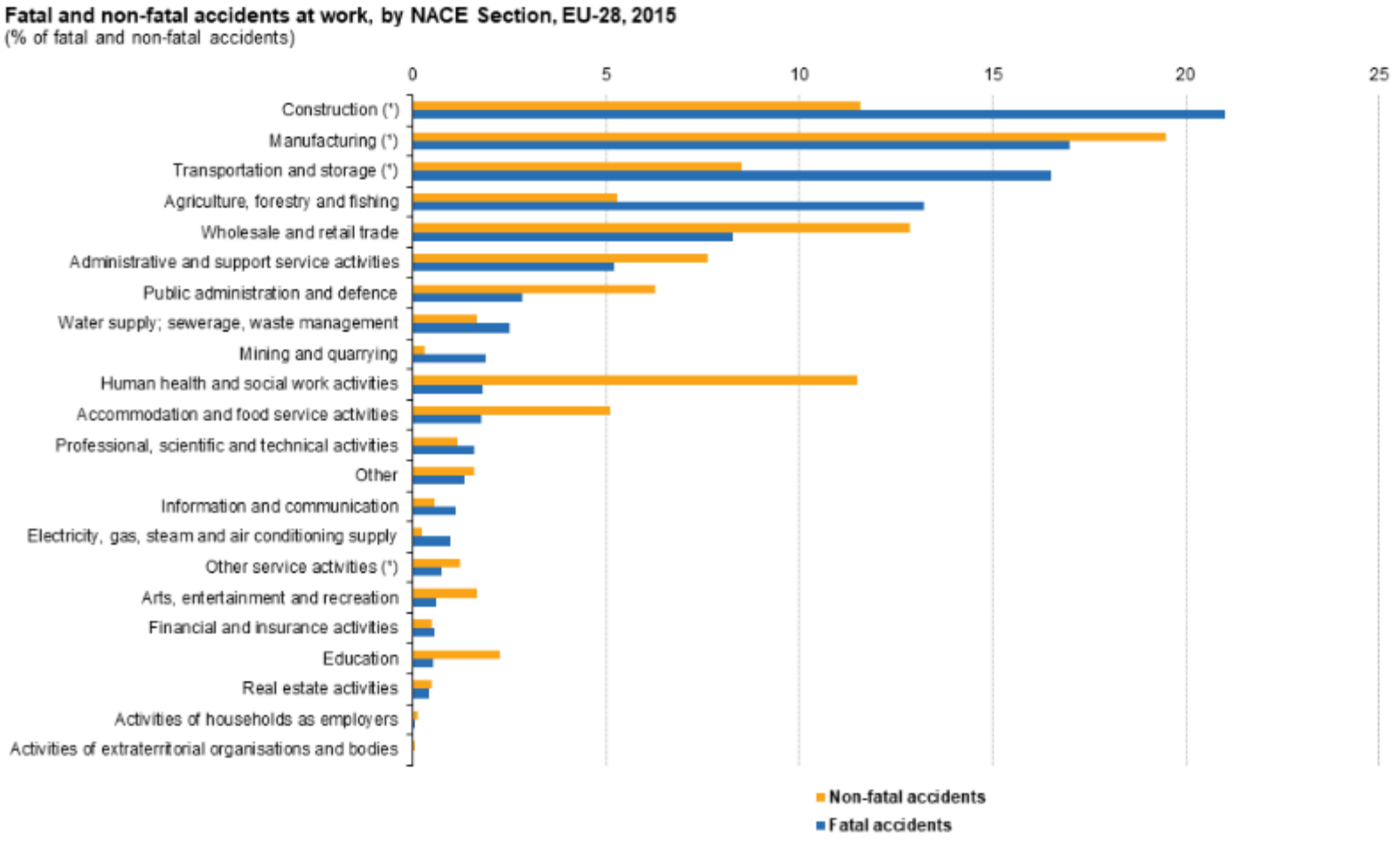
- 3 876 fatal accidents at work in the EU-28 during 2015, an increase of 102 deaths compared with the year before (a ratio of ~ 830 non-fatal accidents for every fatal accident)

- 1.83 fatal accidents per 100 000 persons employed in the EU-28 (incidence rates vary with countries: <1 in DE, SE and >5 RO)

- more than one fifth of all fatal accidents at work in the EU-28 took place within the construction sector

Source: European statistics on accidents at work (ESAW), 2015

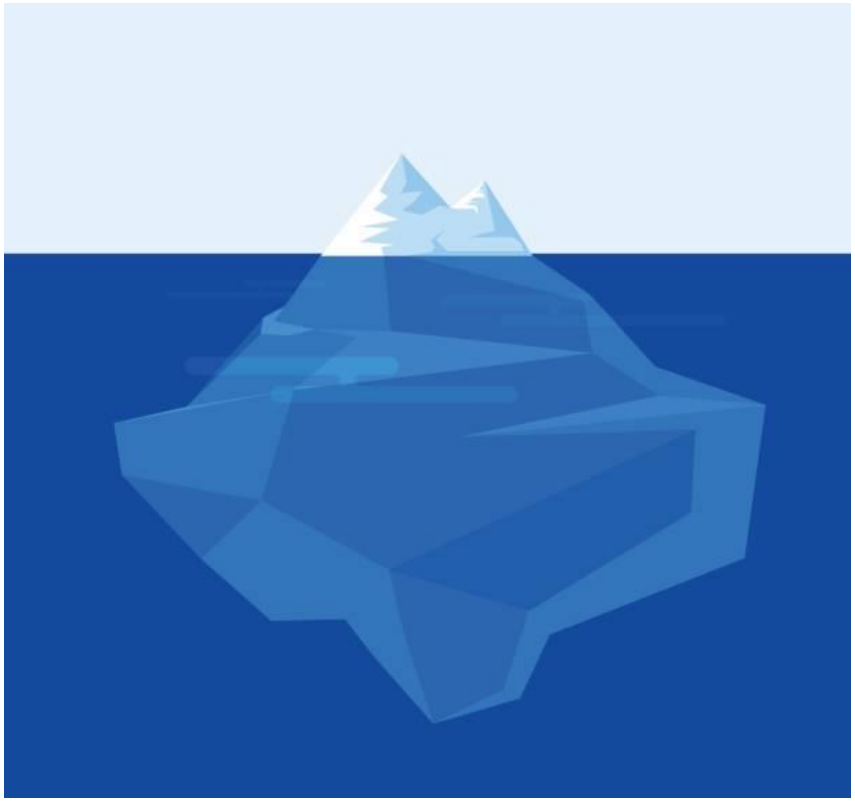
Accidents at work in the EU-28 (2015)



Source: European statistics on accidents at work (ESAW), 2015

Recognised occupational diseases = tip of the iceberg

200 000 skin diseases self-declared in the EU



8 000 skin diseases recognised in the EU

600 000 skin diseases self-declared in the EU

10 000 skin diseases recognised in the EU

Source: Work and health in the EU, Eurostat, 2004

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Self-reported exposure to hazards at work 2005-2015

Table 1: Physical environment index: proportion of workers in EU28 (%) and mean index scores (0–100), 2005–2015

	2005	2010	2005
Proportion of workers in EU28 exposed one-quarter of the time or more (%)			
Vibrations from hand tools, machinery	24	23	20
Noise so loud that you would have to raise your voice to talk to people	30	29	28
High temperatures which make you perspire even when not working	25	22	23
Low temperatures whether indoors or outdoors	22	23	21
Breathing in smoke, fumes (such as welding or exhaust fumes), powder or dust (such as wood dust or mineral dust)	19	17	15
Breathing in vapours, such as solvents and thinners	11	10	11
Handling or being in skin contact with chemical products or substances	14	15	17
Tobacco smoke from other people	20	11	9
Handling or being in direct contact with materials which could be infectious, such as waste, bodily fluids, laboratory materials, etc.	9	11	13
Tiring or painful positions	46	46	43
Lifting or moving people	8	9	10
Carrying or moving heavy loads	35	34	32
Repetitive hand or arm movements	62	63	61
Mean index scores (0–100)			
Physical environment index	**82**	**83**	**84**

Source: 6th EWCS, Eurofound, 2017

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Self-reported work-related health problems in 2013

Have you suffered from one or more health problems caused or made worse by work in the past 12 months? Yes for 8 % of the EU workforce.

Work-related health problems	% respondents
musculoskeletal disorders	60.1
stress, depression or anxiety	15.9
breathing or lung problems	3.6
heart disease or attack, or circulatory system	4.5
headache and/or eyestrain	4.8
infectious disease	1.0
hearing problem	1.1
skin problem	1.2
other types	5.4

Source: compiled from data source of EU LFS ad hoc module 2013

Musculoskeletal Disorders (MSD)

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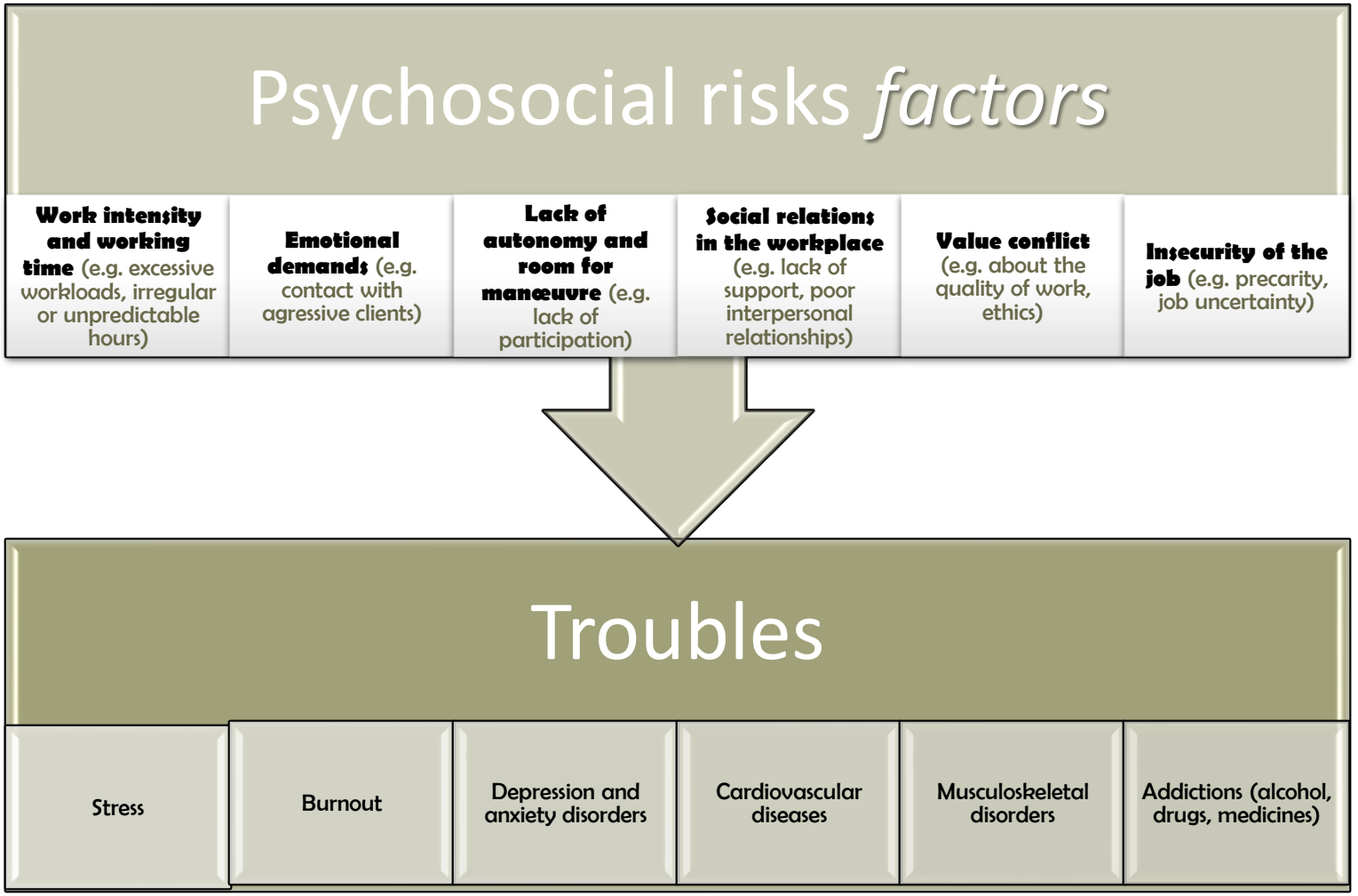
Psychosocial risks (PSR)



Risks (or factors) vs. troubles : not to be confused!

https://www.youtube.com/watch?v=jyPP3Z_Lbro

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Chemical risks

- 120 000 chemicals on the EU-market + millions of mixtures
- Workers exposed in all sectors : chemical/pharma, textile, automotive, construction, cleaning, health care, beauty, etc.
- Up to 50% of all recognised occupational diseases linked to chemical exposure
- Skin diseases (i.e. allergies), respiratory diseases (i.e. asthma), cancers (i.e mesothelioms), reproductive risks (i.e. miscarriage)
- New risks : nanomaterials (i.e. Carbon nanotubes)

https://www.napofilm.net/en/napos-films/scratch-and-sniff-chemical-risks-work

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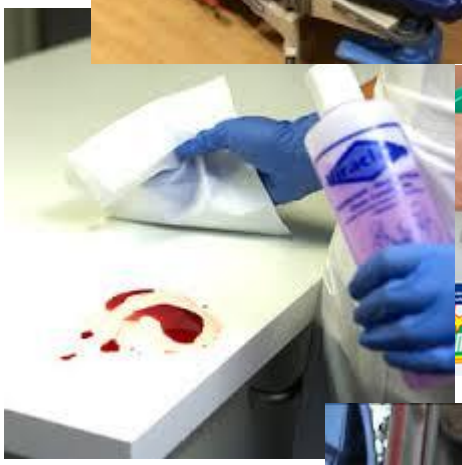
Chemical risks at the workplace: some examples

Disinfectants in hospitals



Metal cutting fluids

fumigants in containers

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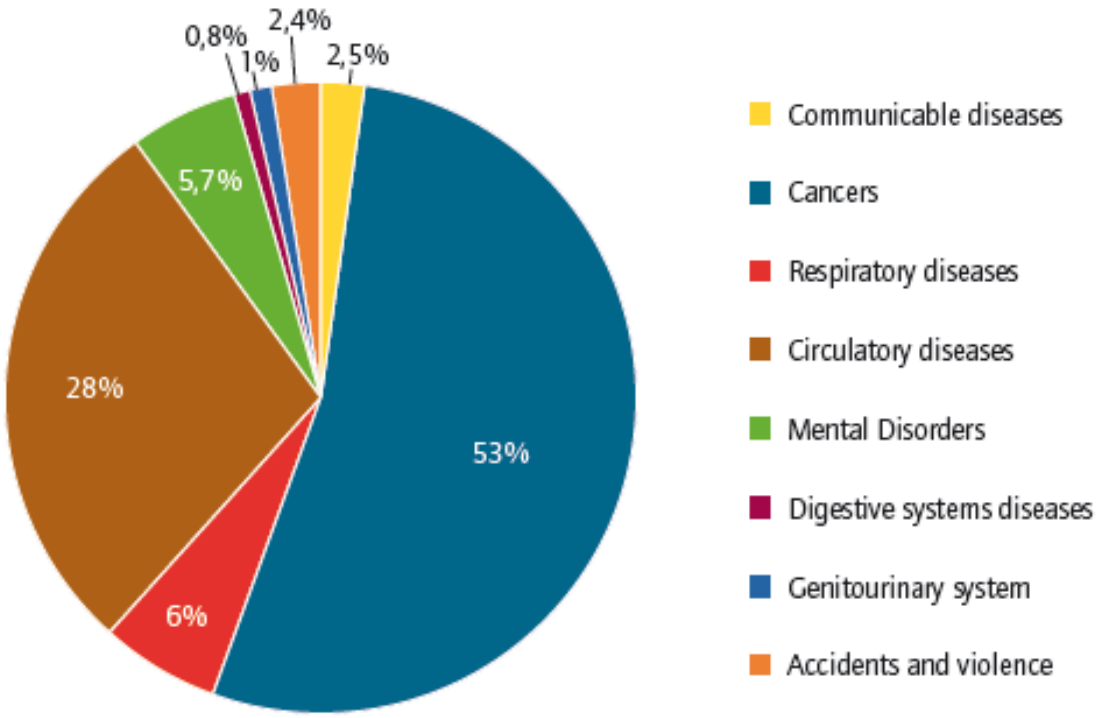
Occupational cancers

Work-related annual deaths in the EU-28

Cancers are the first cause of death at work !



Source : Takala J., ETUI, 2015 based on WHO and ILO data

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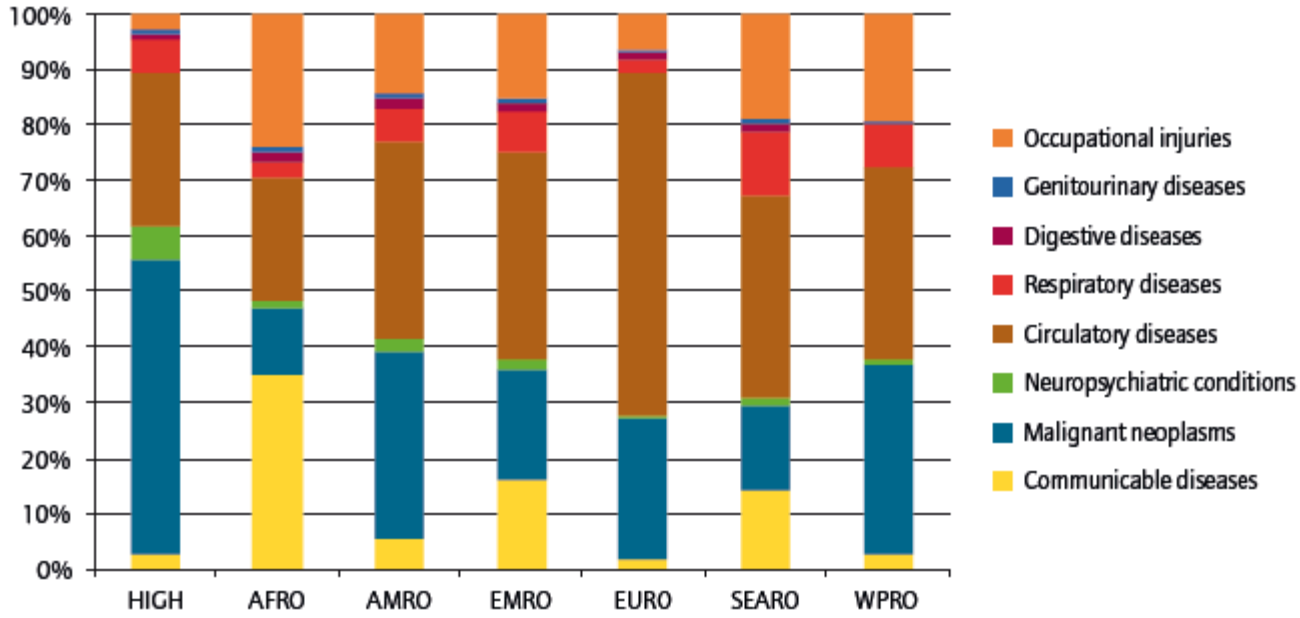
In high income countries: cancers are the first cause of work related mortality

Figure 2 Burden caused by cancer and other work-related diseases by WHO regions, released in 2014.
Total number of workplace fatalities was 2.3 million



HIGH – High income countries, **AFRO** – African Region (low-and middle-income countries), **AMRO** – Region of the Americas (low-and middle-income countries), **EMRO** – Eastern Mediterranean Region (low-and middle-income countries), **EURO** – European Region (low-and middle-income countries), **SEARO** – South-East Asia Region (low-and middle-income countries), **WPRO** – Western Pacific Region (low-and middle-income countries).

Source : Takala J., ETUI, 2015 based on WHO and ILO data

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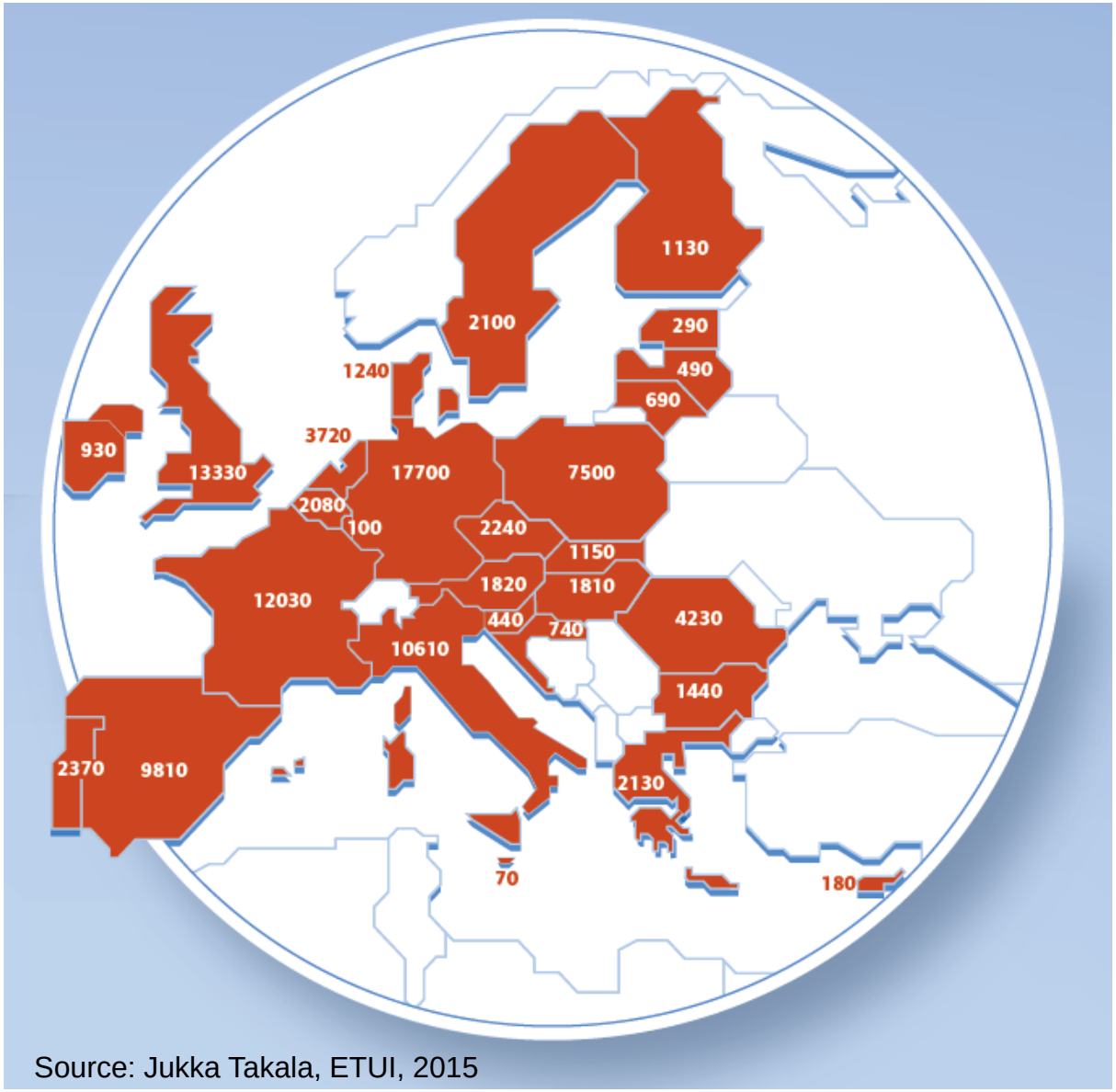
Distribution of occupational cancer deaths/year in the EU-28



Source: Jukka Takala, ETUI, 2015

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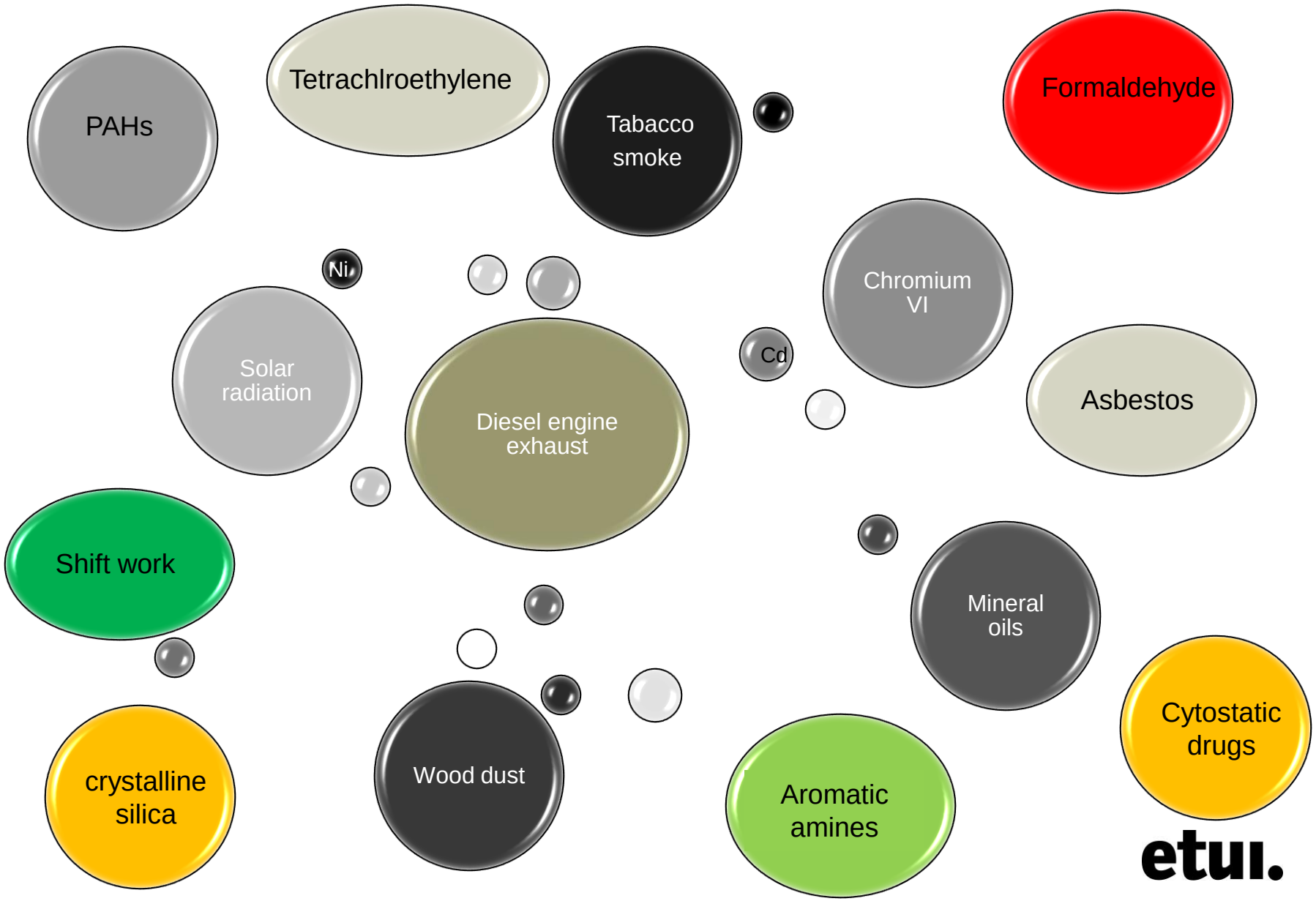
Most frequent carcinogens at work



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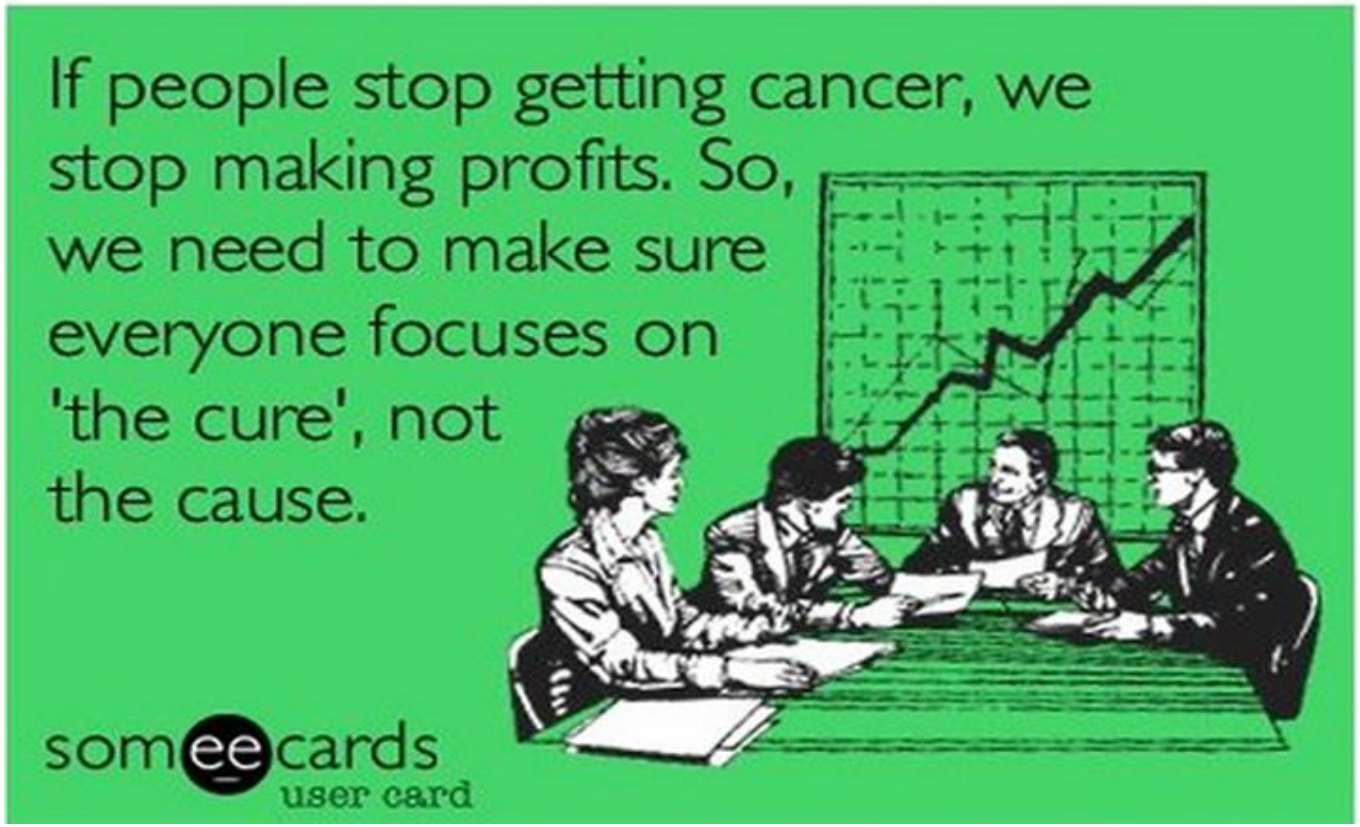
Social production of cancer

- Profits are considered as a priority, workplace prevention is described as a burden mainly when direct costs for employers are low
- Most of the « public health » campaigns against cancer are concentrating
  - On « individual behaviour »
  - On detection
  - Are not insisting on primary prevention at the workplace
- For instance, Obama plan against cancer (2016) was focused on new treatments, possible vaccines, cancer detection and the genetic makeup of tumors. Primary prevention was not considered as an important issue

an example of double profit: AstraZeneca

- big producer of pesticides
- main producer of Tamoxifen (drug massively used against breast cancer)



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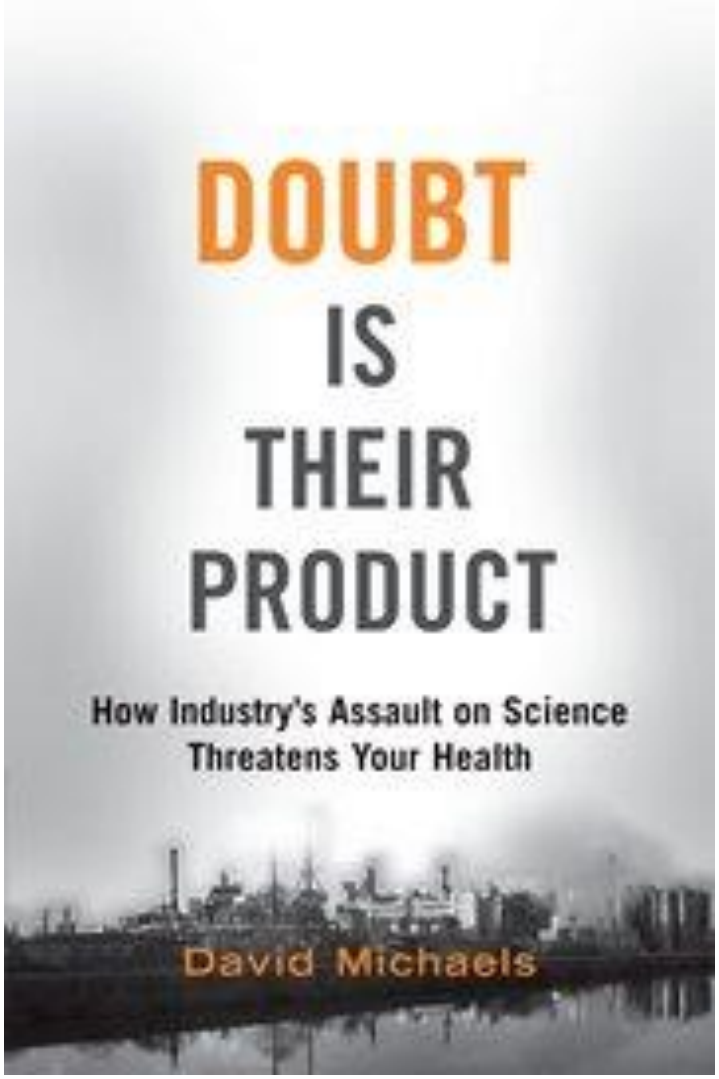
Science is not outside the conflict



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Work-related cancers cause social inequalities in health

- For most cancers, social gradient in the incidence and mortality
- Blue-colars workers are more exposed to carcinogens than white-colars
- Worplace exposures are neglected and often there is a double standard: one for « public health », another for « occupational health »

NOCCA: a « mapping » of cancers by occupations

- NOCCA = Nordic Occupational Cancer Study
- 2.8 million cases of cancer in five countries: Iceland, Norway, Sweden, Finland and Denmark
- Relates localization of cancers to the patients' professional activities. It takes account of the professions exercised by 15 million persons in the last four decades (from the early 60s to the end of the 90s)
- In certain cases, results confirm ties that are already known, such mesothelioma and professions involving exposure to asbestos (plumbers, sailors, etc.), skin cancers and fishermen and farmers who work outdoors, cancers of the nasal fossae and workers in the wood industry, a very large number of cancers in the building industry where workers are subjected to multiple exposure.
- In other cases, the results of the project have brought new data. For example, the project identified a greater prevalence of cancers of the mouth and the vagina among women working in the chemical industry; skin cancers and breast cancers (in both men and women) and ovarian cancers in people working in the printing industry; thyroid cancers among women working in agriculture

Source : https://astra.cancer.fi/NOCCA/full-article.html

Gender inequality and work related cancer

- Work related cancer among women largely neglected by the epidemiological studies (with a strong impact on the estimation based on « attributable fractions »)
- Strength of stereotypes linking work related cancer with males
- Patterns of exposure can be different
- Levels of control are often different (cleaning sector, hairdressers, etc…)
- Biological impact can be different

Report from Breast Cancer Fund in the United States 2015

- Among nurses, the risk increased by 50 %. It is 4 times higher among professionals. New associations have become apparent in recent research. The risk is 5 times higher in the hairdressing and cosmetics sectors, as also among food and beverage production workers. It is 4.5 times higher among dry cleaning and laundry workers. It is 4 times higher among workers in the paper and printing industry and among those making rubber and plastic products.
- Which causes? Risks mainly stem from a series of chemicals such as benzene and other solvents, polycyclic aromatic hydrocarbons (PAHs), pesticides and numerous other endocrine disruptors. Night work and ionising radiation are also at the root of breast cancer. Stress might be a risk factor.

Attributable fraction (AF) of work-related cancers

- AF: the proportion of cancer cases that would not have occurred in the absence of occupational exposure

Incidence AF for the 25 carcinogenic agents (reference year: 2015)			
Scenario	Central-low	Central-core	Central-high
AF – Both genders	6%	8%	12%
AF – Women	3%	5%	7%

Source: https://www.etui.org/Publications2/Reports/The-cost-of-occupational-cancer-in-the-EU-28

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Cost of occupational cancers in the EU-28

- Total cost of occupational cancer registrations between **€270 and €610** billion each year
- 1.8%-4.1% of EU GDP

Which costs have been monetised ?

- **Direct costs:** e.g. healthcare, transport, etc.
- **Indirect costs:** e.g. productivity losses due to absence from work or premature death, etc.
- **Intangible/human costs:** non-financial human losses, e.g. reduced quality of life, pain & suffering, etc.

Who bears the costs ?

- **Workers and their families** (> 98 % of costs)
- **Employers**
- **Public health care system / social security**

Source: https://www.etui.org/Publications2/Reports/The-cost-of-occupational-cancer-in-the-EU-28

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EU OSH legislation

OSH “Framework Directive” (89/391/EEC)

- Aim: establish an equal level of safety and health for the benefit of all EU workers

- Scope: all sectors of activity (private + public) but not military/police & domestic workers

- Minimum requirements: Member States are free to adopt stricter ruler for the protection of workers when transposing EU Directives into national law (requirements can vary across MS)

- Obligations for employers:
  - evaluate all the risks to the safety and health of workers
  - take appropriate preventive measures to make work safer and healthier on the basis of general prevention principle
  - take the necessary measures for first aid, fire-fighting, etc.
  - keep a list of occupational accidents and report it to authorities
  - inform and consult workers and allow them to take part in discussions on all questions relating to safety and health at work
  - provide training to workers

- Obligations for workers: make correct use of production tools and PPE, inform, collaborate with employers

General principles of prevention in Dir 89/391/EEC

- avoiding risks
- evaluating the risks
- combating the risks at source
- adapting the work to the individual
- adapting to technical progress
- replacing the dangerous by the non- or the less dangerous
- developing a coherent overall prevention policy
- prioritizing collective protective measures (over individual protective measures)
- giving appropriate instructions to the workers

23 “daughter” directives under the OSH “Framework Dir”

Hazard-specific OSH Directives	
Vibration Directive	Dir 2002/44/EC
Noise Directive	Dir 2003/10/EC
Electromagnetic Fields Directive	Dir 2004/40/EC
Artificial Optical Radiation Directive	Dir 2006/25/EC
Explosive Atmosphere –ATEX Directive	Dir 1999/92/EC
Carcinogens & Mutagens Directive	**Dir 2004/37/EC**
Chemical Agents Directive	**Dir 98/24/EC**
Asbestos Directive	Dir 2009/148/EC
Biological Agents Directive	Dir 2000/54/EC
Manual Handling Directive	Dir 90/269/EEC
Display Screen Equipment	Dir 90/270/EEC

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23 “daughter” directives under the OSH “Framework Dir”

Type-of-worker OSH Directives	
Temporary workers Directive	Dir 91/383/EEC
Pregnant/Breastfeeding workers Directive	Dir 92/85/EEC
Young People Directive	Dir 94/33/EC

Sector-specific OSH Directives	
Construction Directive	Dir 92/57/EEC
Mine and Quiries Directive	Dir 92/57/EEC
Drilling Directive	Dir 92/91/EEC
Medical Treatment on Board Vessels Directive	Dir 92/29/EEC
Fishing Vessels Directive	Dir 93/103/EC

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23 “daughter” directives under the OSH “Framework Dir”

General OSH Directives	
Workplace Directive	Dir 89/654/EEC
Work Equipment Directive	Dir 2009/104/EC
Use of Personal Protective Equipment (PPE)	Dir 89/656/EEC
OSH Signs Directive	Dir 92/58/EEC

Remark: no specific EU OSH Directive on MSDs or PSRs !

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Chemical Agents Directive (98/24/EC)

- Aim: protection of workers from risks related to chemicals at work
- Scope: all chemicals used at the workplace (regardless of volume)
- Obligations for employers:
  - Determine whether any hazardous chemical agents are present in the workplace
  - Assess any risk to the H&S of workers arising from their use
  - If risks do exist, mandatory hierarchy of prevention and protection measures (substitution > exposure reduction > protective equipmt)
  - Monitor the workers‘ health
  - Comply with existing Occupational Exposure Limit Values (OELVs); up to now ~ 150 substances with indicative OELVs at EU level
  - Keep risk reduction measures up to date
  - Provide information and training to workers

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Carcinogens & Mutagens Directive (2004/37/EC)

- adopted in 1990 as one of the first individual directives under the 1989 OSH “Framework Directive”. CMD was since updated and extended to become 2004/37/EC = consolidated version
- aim: protection of workers from risks related to carcinogens and mutagens at work
- scope: all carcinogens and mutagens (category 1A or 1B)
- obligations for employers:
  - Eliminate/Replace with a substance which is not or less dangerous (mandatory if the alternative is available & regardless of cost)
  - If substitution is not technically feasible, use a closed system
  - Reduce workers' level of exposure as low as is technically possible
  - Training and information of workers
  - Collecting systematic data on exposure

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Carcinogens & Mutagens Directive (2004/37/EC)

- **Annex I** includes the list of identified “Process Generated Substances” and clarifies the scope. Today only for 5 PGSs (i.e. work involving exposure to hardwood dust)

- **Annex II** includes practical recommendation for the health surveillance of workers (non-binding measures !)

- **Annex III** includes Binding Occupational Exposure Limit Values (BOELVs). Only 3 carcinogens in 25 years (1990-2016):
  - Benzene
  - Vinyl Chloride Monomer
  - Hardwood dust

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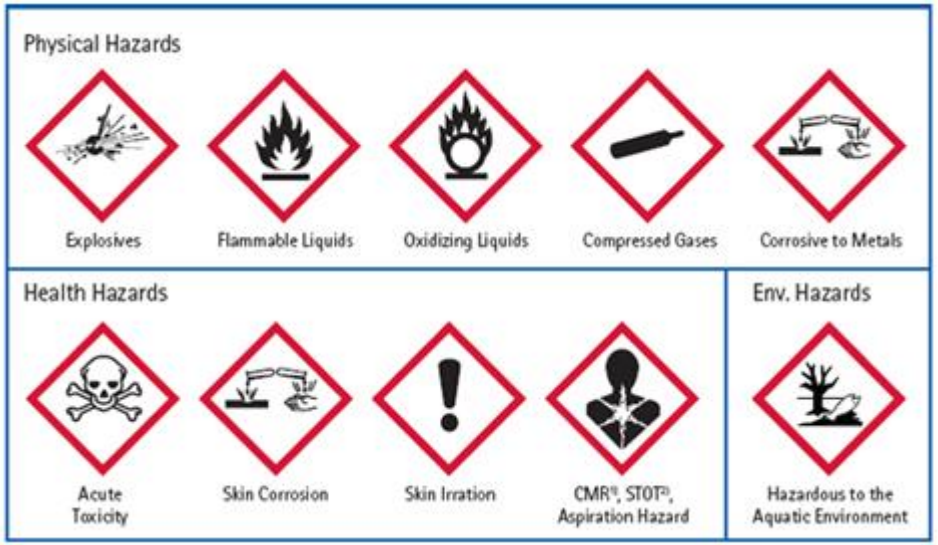
EU Chemicals legislations (marketing and use)

Classification, Labelling & Packaging (CLP) Regulation

- For all substances (& mixture) marketed in the EU
- Criteria for C&L laid down in CLP Regulation (Reg No 1272/2008) to implement Globally Harmonised System.
- Industry to self-classify all substances or mixtures placed on market;
- Some substances with EU harmonised classification (Annex VI of CLP Regulation – CMR substances and sensitisers)
- ECHA to maintain an C&L inventory publicly available



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The objectives & principles of REACH- Reg No1907/2006

- ensure a high level of protection for human health (workers + consumers) and the environment from the risks that can be posed by chemicals (→ close the data gap)
- enhance the competitiveness of the EU chemicals

- burden on proof shifted on industry
- no data no market
- progressive substitution of SVHCs with safer alternatives
- precautionary principle

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REACH regulation (EU 1907/2006)

- Registration: Manufacturers and importers of chemicals > 1 tpa are required to register their substances to demonstrate they can be used safely
- Evaluation of some substances by Member States / European Chemicals Agency
- Authorisation only for substances of very high concern
- Restrictions when risks are unacceptable

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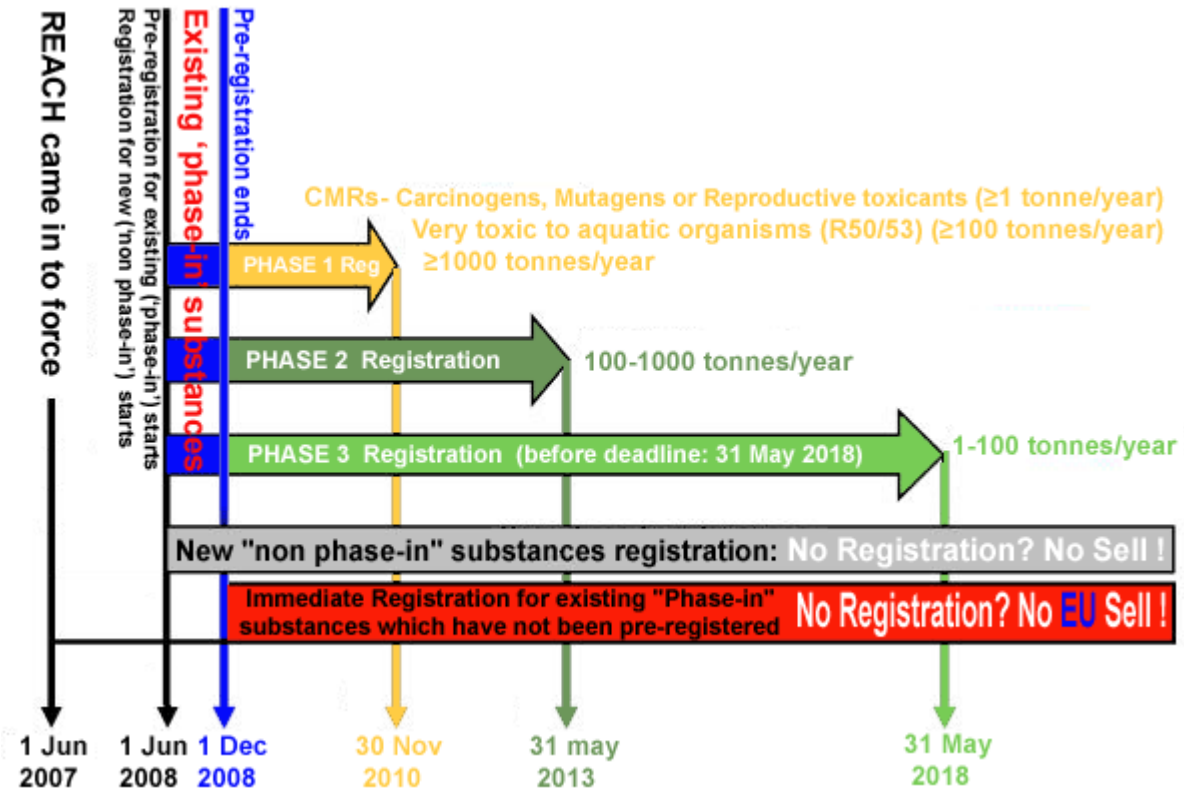
Timeline for REACH registration



~ 21 500 unique substances registered by May 2018

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What is REACH registration information used for ?

Regulatory Decisions	• Authorisation • Restriction • Harmonised classification
Information to users of Chemicals	• Safety data sheets and exposure scenarios • Uses that are advised against • Advice to consumers • Dissemination advice on ECHA website

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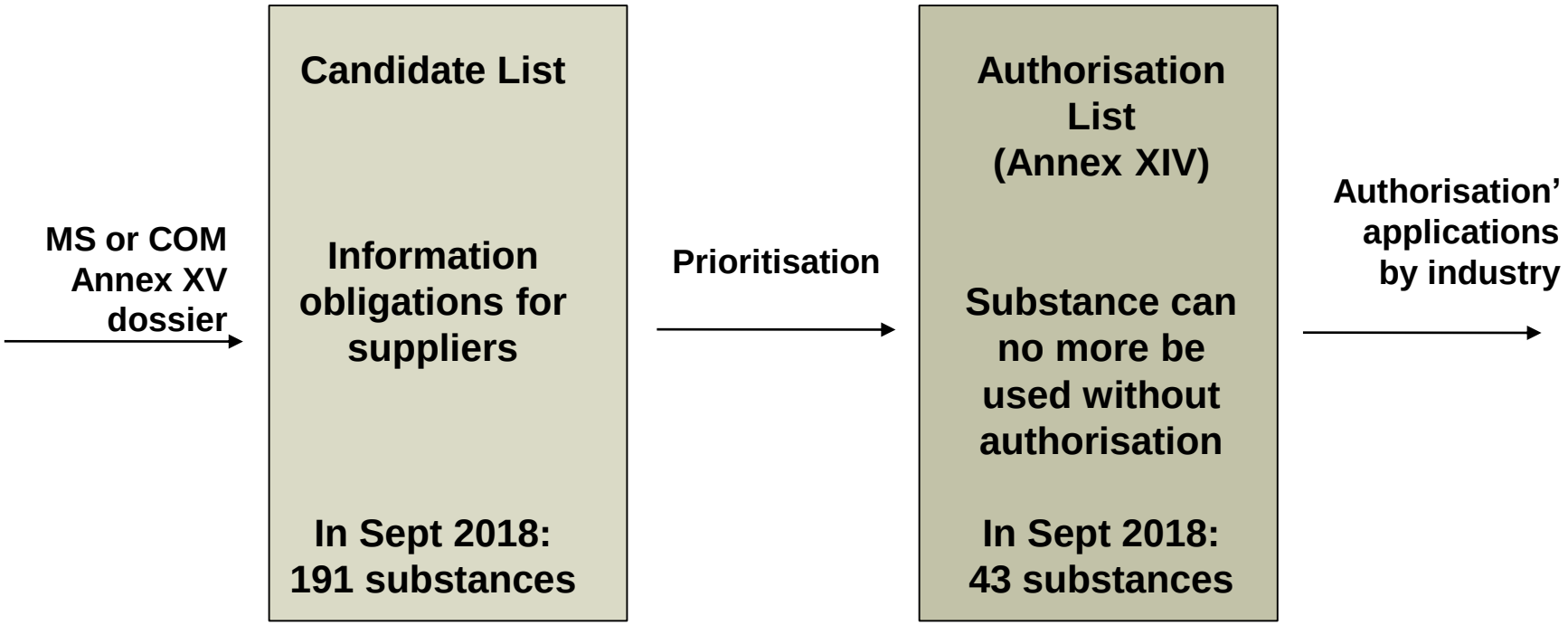
REACH authorisation : main aim is substitution of SVHC

Substances of very high concern:
PBTs, vPvBs, CMRs (1&2), equivalent concerns



http://www.echa.europa.eu/web/guest/candidate-list-table

http://echa.europa.eu/addressing-chemicals-of-concern/authorisation/recommendation-for-inclusion-in-the-authorisation-list/authorisation-list

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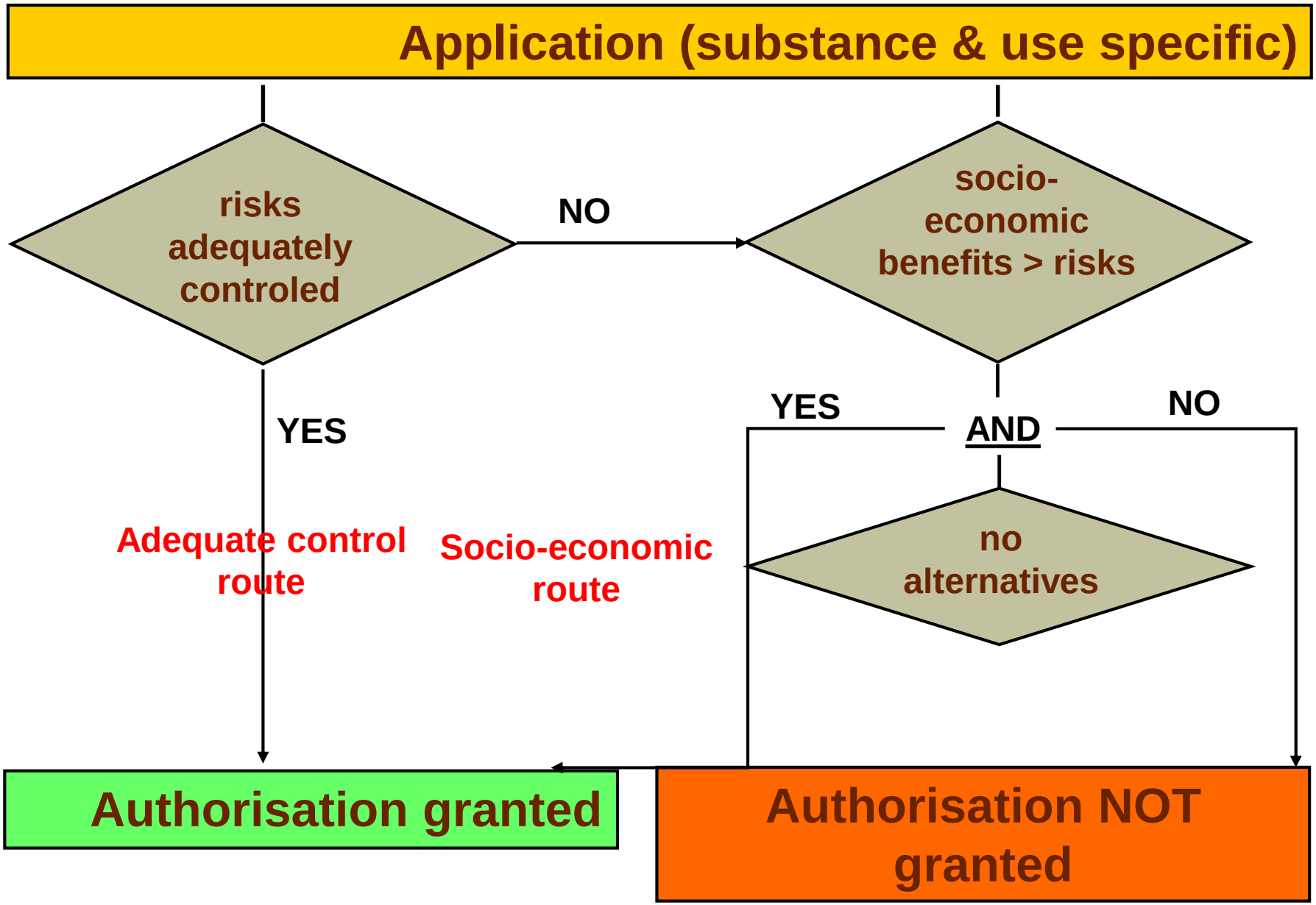
Granting authorisations – The 2 routes



Examples of SVHC & authorisations granted by COM

SVHC (use)	Classification	Route
DEHP (plastisizer)	Repr 1B	Socio-economic
DBP (plasticizer)	Repr 1B	Socio-economic
Diarsenic trioxide (metal plating)	Carc 1A	Socio-economic
Lead (sulfo)chromate (road marking paint)	Carc 1A & Repr 1B	Socio-economic
HBCDD (flame retardant)	PBT	Socio-economic
Trichloroethylene (solvent)	Carc 1B	Socio-economic

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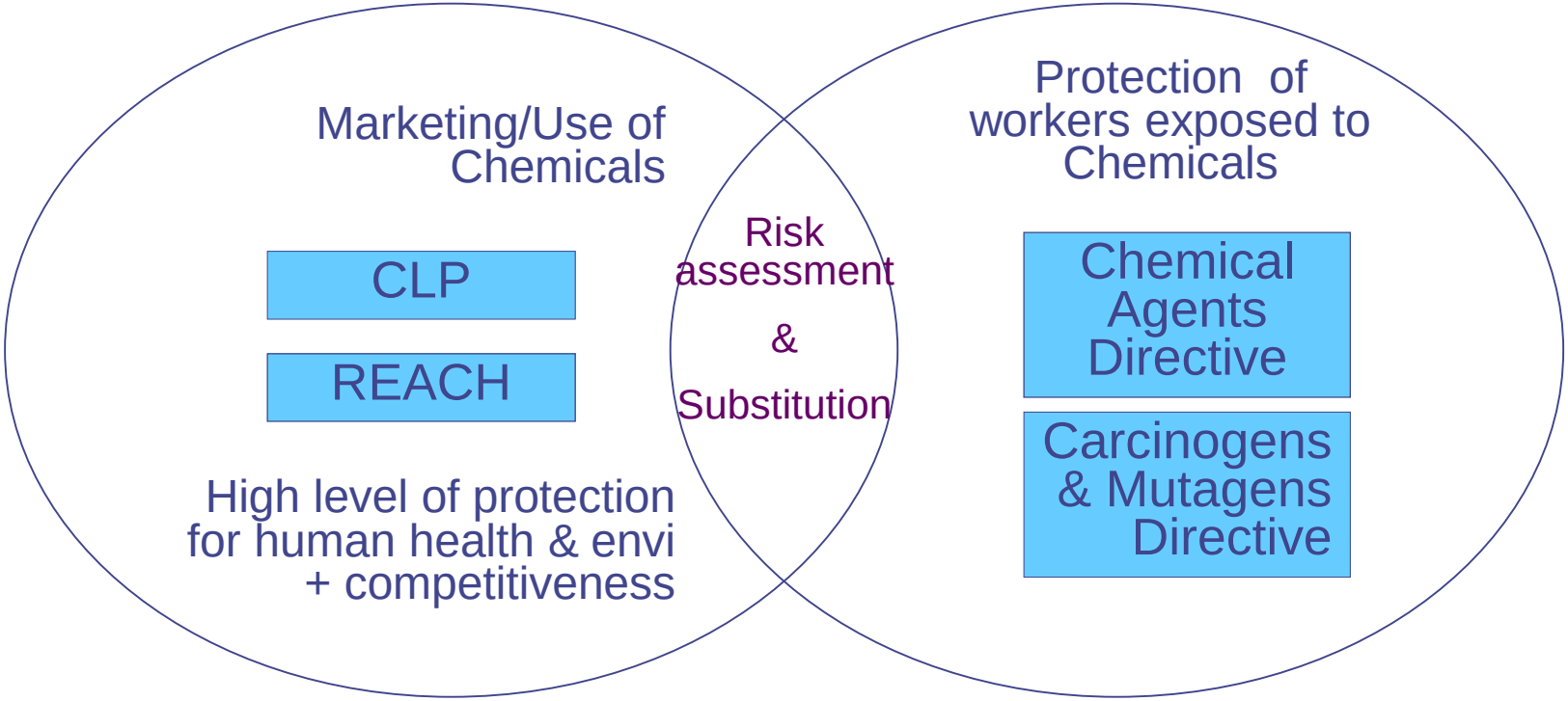
Links between REACH & OSH legislations on chemicals



REACH, Art 4 (2) : This Regulation shall apply without prejudice to Dir 89/391, Dir 98/24, Dir 2004/37, [….]

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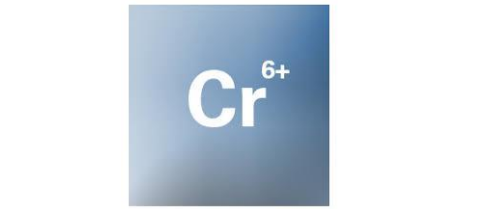
Chromium VI

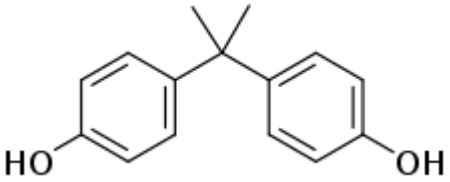


- Main uses : chrome plating but also present in welding fumes
- Carcinogenic to humans
- **CMD:** binding OEL
- **REACH authorisations**:

Only those companies who were granted authorisation can keep using CrVI for plating

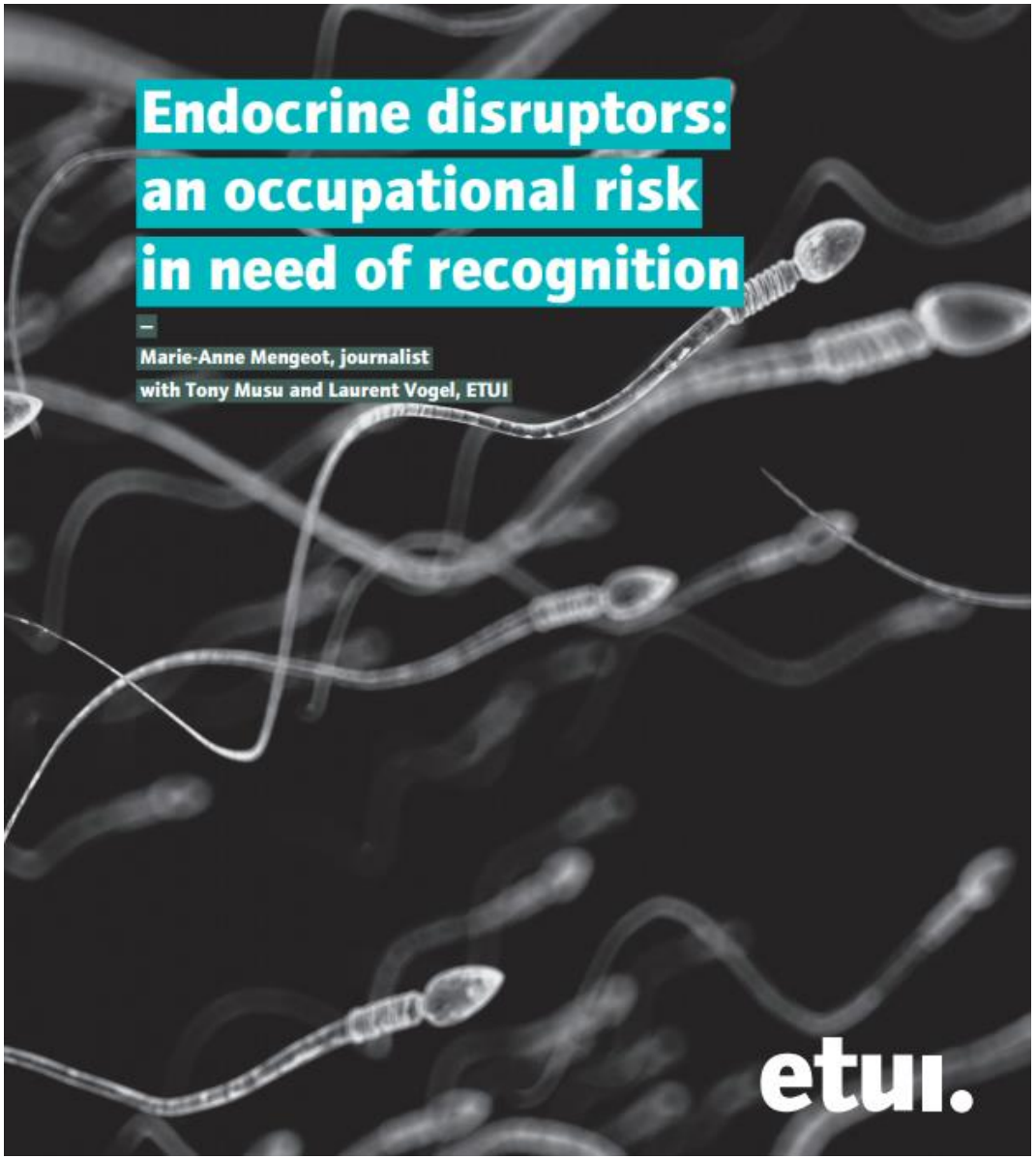
Only uses applied for are permitted

Bisphenol-A (BPA)



- Main uses : epoxy resins, polycarbonates, thermal paper
- Toxic for reproduction and endocrine disruptor for humans (risk for the unborn children of female workers)
- **CAD:** indicative OEL
- **REACH restriction** BPA shall not be placed on the market in thermal paper in a concentration equal to or greater than 0,02 % by weight after 2 January 2020.

Endocrine disruptors: a gap in the EU legislation



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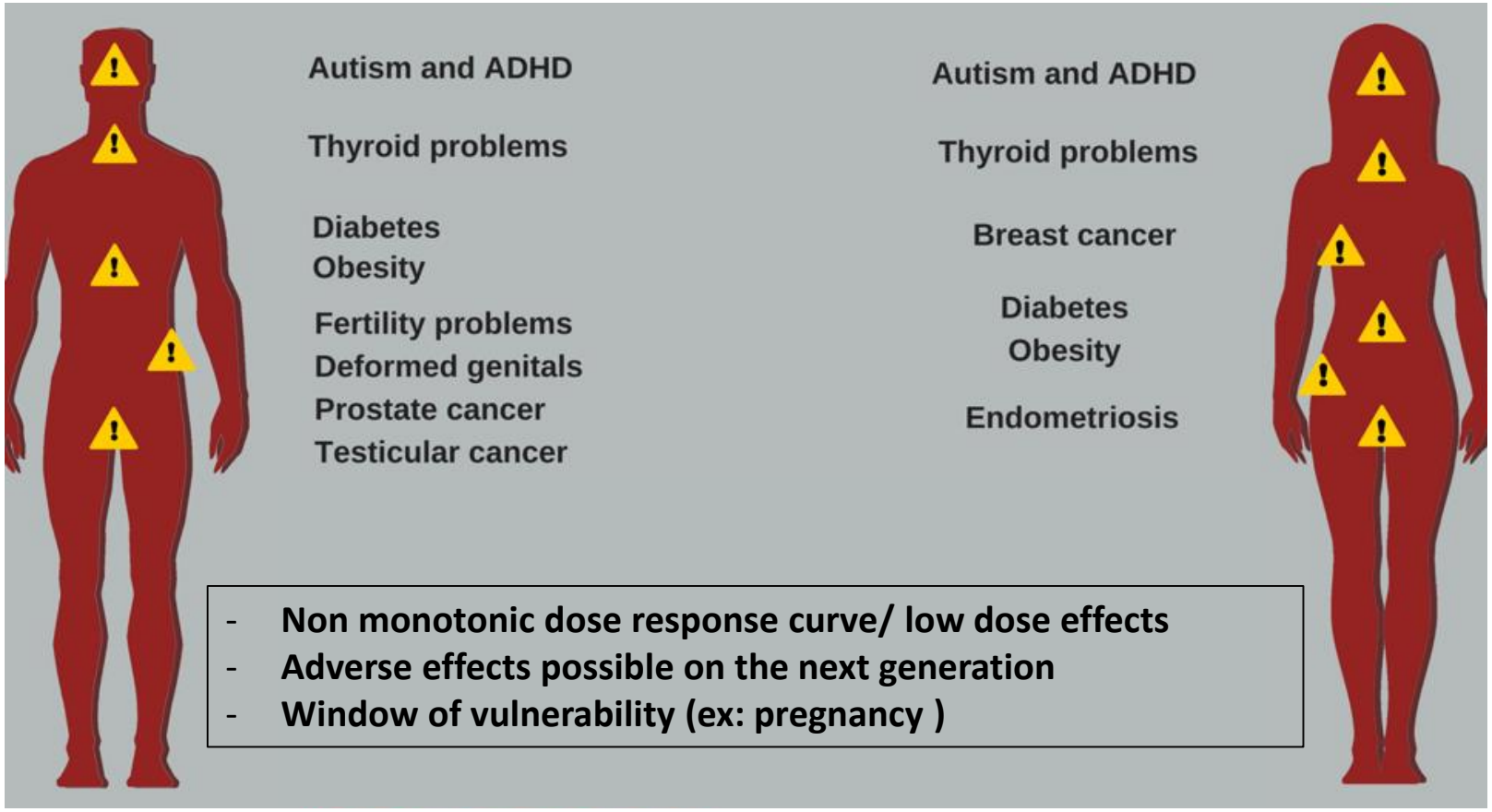
Effects of endocrine disruptors on humans



- **Non monotonic dose response curve/ low dose effects**
- **Adverse effects possible on the next generation**
- **Window of vulnerability (ex: pregnancy)**

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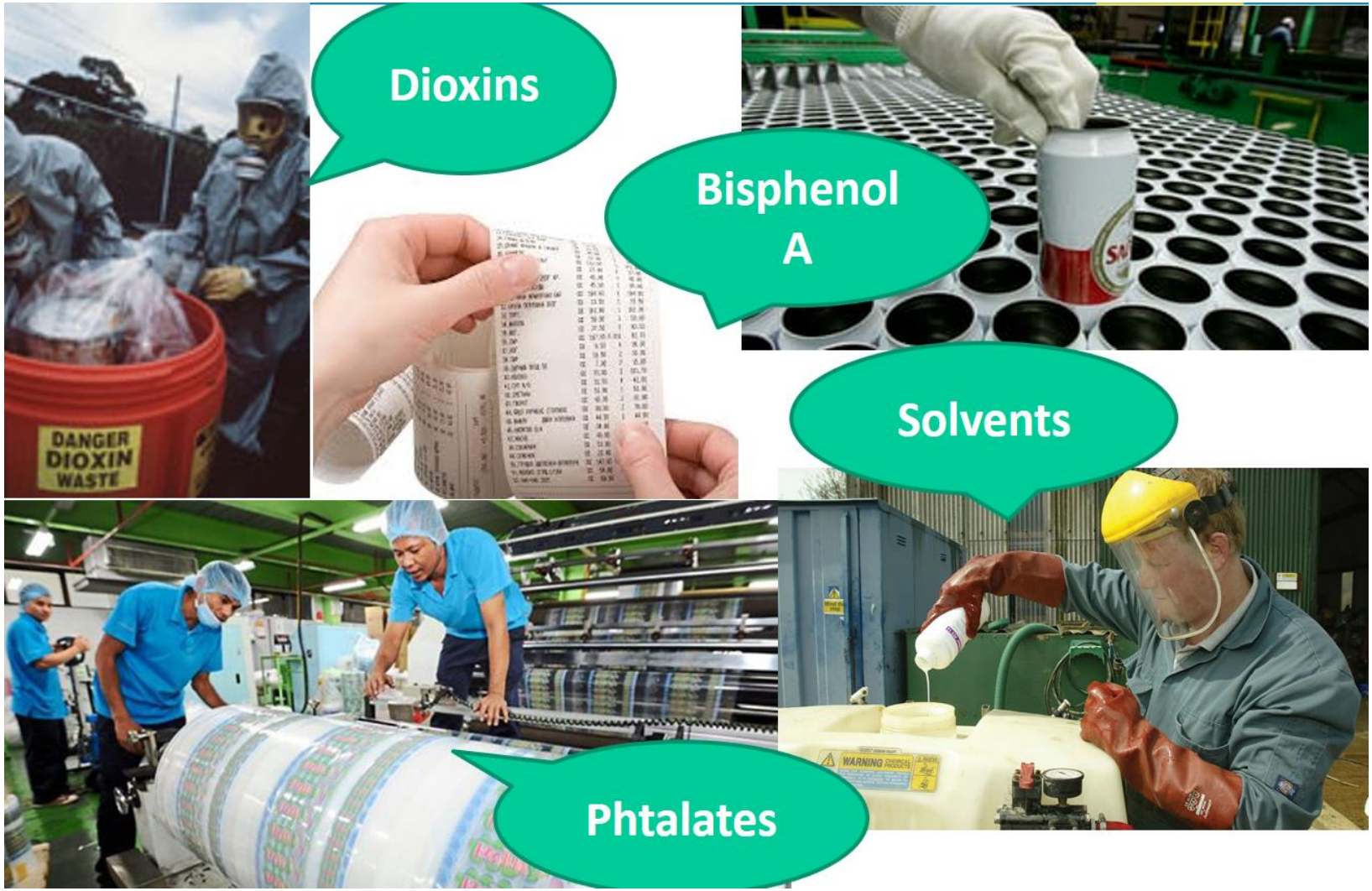
Occupational exposure to endocrine disruptors



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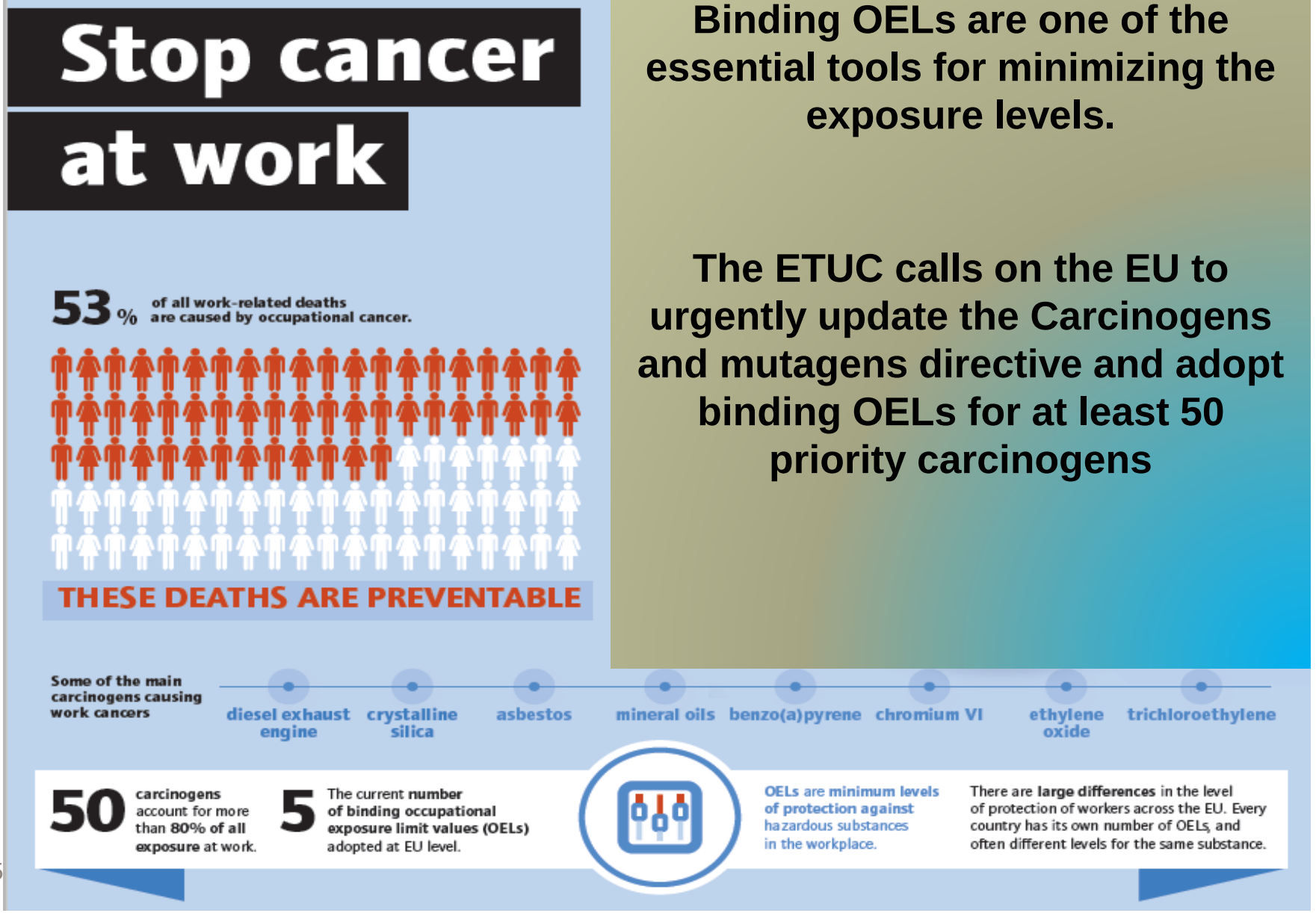
The revision of the Carcinogens Directive

- Adopted in 1990
- (Modestly) amended in 1997 and 1999
- Revision was considered as a priority by 2002
- It was completely paralysed by the « better regulation » offensive
- By 2016, the Commission was obliged to adopt a first proposal for the revision of the directive during the Dutch presidency
- The proposal was minimalist
- It was improved by the agreement between European Parliament and Council and adopted in December 2017

ETUC campaign

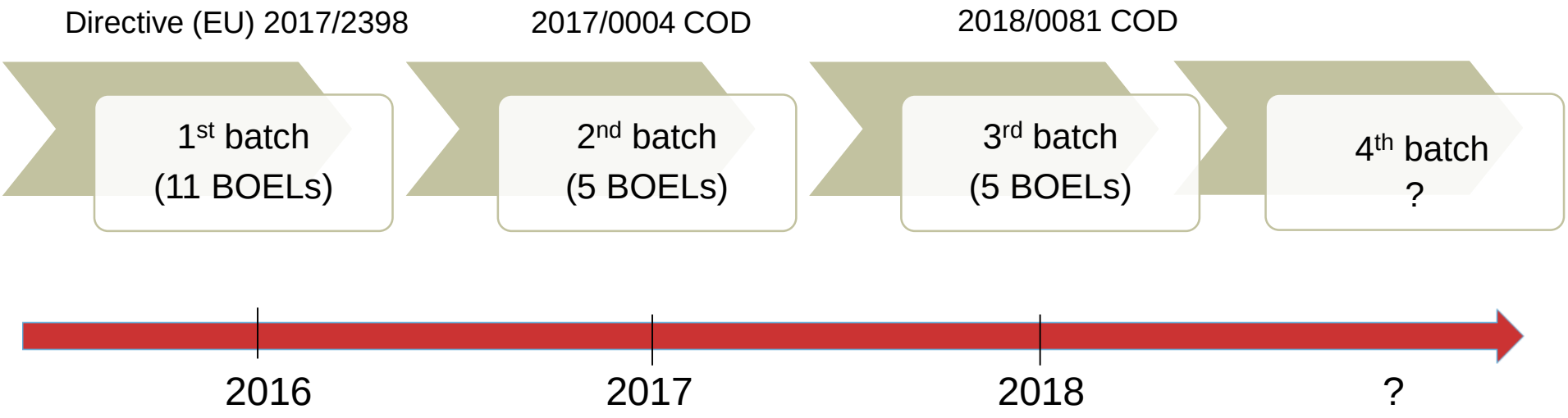


Binding OELs are one of the essential tools for minimizing the exposure levels.

The ETUC calls on the EU to urgently update the Carcinogens and mutagens directive and adopt binding OELs for at least 50 priority carcinogens

Revision of the Carcinogens & Mutagens Directive (CMD)

- Since the adoption of the CMD in 1990 only 14 (3 +11) carcinogens with Binding Occupational Exposure Limits (BOELs)



- Commissioner Thyssen commitment: 50 carcinogens in total with BOELs in CMD Annex III by 2020

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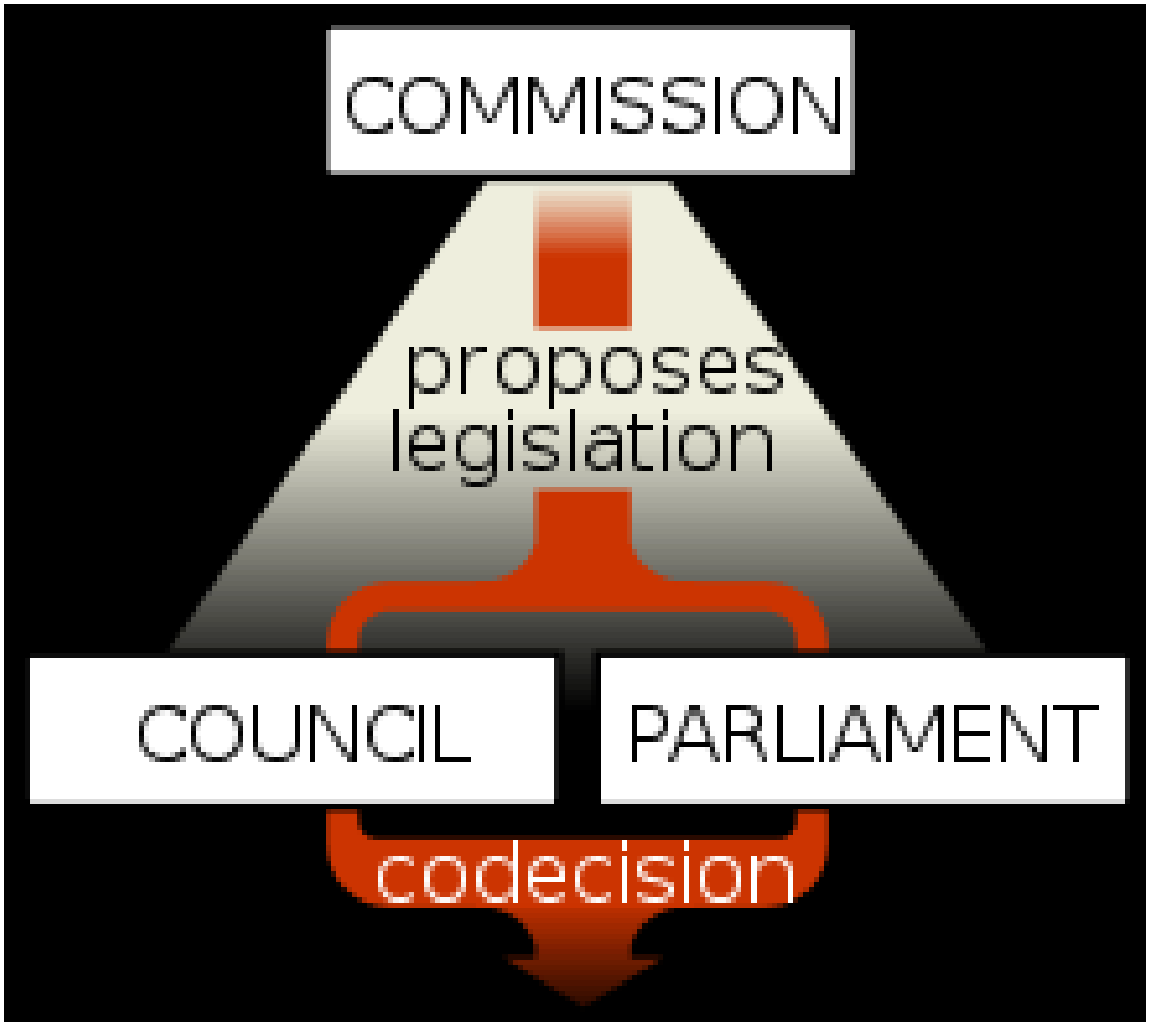
Co-legislators have the possibility to amend COM proposal



Ordinary Legislative Procedure is now the new name of Codecision

First batch adopted in December 2017 (Dir 2017/2398)

Chemical agents	Proposed OELs	Relevant sectors	Types of cancer caused/other illnesses	No. of exposed workers
1,2- Epoxypropane	2.4 mg/m^3	Chemical manufacture; synthetic lubricants, oil field drilling chemicals; polyurethane systems.	Lymphopoietic cancer, haematopoietic cancer, increased leukaemia risk	485-1,500
1,3-Butadiene	2.2 mg/m^3	Manufacture of refined petroleum products, manufacture of rubber products	Lymphohaema-topoietic cancer	27,600
2-Nitropropane	18 mg/m^3	Manufacture of basic chemicals, manufacture of aircraft and spacecraft (downstream use)	Liver tumours	51,400
Acrylamide	0.1 mg/m^3	Manufacture of chemicals and chemical products, education, research and development, other business activities, health and social work, public administration and defence.	Pancreatic cancer	54,100
Bromoethylene	4.4 mg/m^3	Chemicals and allied production; rubber and plastic production; leather and leather production; fabricated metal production for wholesale trade	Liver cancer	n/a
Chromium (VI) compounds	0.005 mg/m^3 (5y transition 0.01 mg/m^3)	Production and use of chromium-containing pigments, paints and metal (conversion) coatings. In terms of downstream use, chromate compounds, including barium chromate, zinc chromate, and calcium chromate, may be used as basic primers and top coats in the aerospace sector.	Lung cancer and sinonasal cancer	916,000
Ethylene Oxide	1,8 mg/m^3	Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction; Manufacture of food products, textiles, chemicals, chemical products, medical, precision and optical instruments, watches, clocks; Hospital and Industrial sterilization; R&D; Public Administration and Defence; Education; Health and Social Work	Leukaemia	15,600
Hydrazine	0.013 mg/m^3	Chemical blowing agents; agricultural pesticides; water treatment	Lung and colorectal cancer	2,124,000
o-Toluidine	0.5 mg/m^3	Manufacture of chemicals, chemical products and man-made fibres; Manufacture of rubber products; Research and development; Public administration and defence; education; health and social work.	Bladder cancer	5,500
Respirable Crystalline Silica (RCS)	0.1 mg/m^3 (to be reviewed)	Mining, glass manufacturing, construction and electricity, gas, steam and hot water supply industries.	Lung cancer, silicosis	5,300,000
Refractory Ceramic Fibres (RCF)	0.3 f/ml	Manufacturing (fibre production, finishing, installation, removal, assembly operations, mixing/forming)	Adverse respiratory effects, skin and eye irritation; possibly lung cancers	10,000
Vinyl Chloride Monomer (VCM)	2.6 mg/m^3	Manufacture of chemicals and chemical products (VCM and PVC production)	Angiosarcoma, hepatocellular carcinomas	15,000
Hardwood dusts	2 mg/m^3 (5y transition 3 mg/m^3)	Wood working industry, furniture manufacture sectors and construction.	Sinonasal and nasopharyngeal cancers	3, 333,000

COM proposal of 10 Jan 2017 (2017/0004 COD) = batch 2

Chemical agents	Proposed OELs	Relevant sectors	Types of cancer caused/other illnesses	No. of exposed workers
4,4'-methylenedianiline (MDA)	0,08 mg/m^3 (+ skin notation in Annex III)	Production of polyurethane foams	Liver and thyroid cancer in animal studies. Also: suspected of causing genetic defects, causes damages to organs,…	390,000 – 3,900,000
Trichloroethylene (TCE)	54,7 mg/m^3 (+ skin notation in Annex III)	Degreasing and cleaning of metal parts Used in adhesives, Used as a solvent and for synthesis in the chemical industry.	Liver cancer, Kidney cancer. Also: suspected of causing genetic defects, causes serious eye irritation, causes skin irritation, …	74,000
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	1,9 mg/m^3 (+ skin notation in Annex III)	Chemical industry (production of resins) Paper production	Lung cancer. Also: toxic if inhaled, toxic in contact with skin, toxic if swallowed…	40,000
Ethylene dibromide (EDB) (Dibromoethane)	0.8 mg/m^3 (+ skin notation in Annex III)	Chemical industry Preparation of dyes and pharmaceuticals	Caused tumours in animal studies. Also: toxic if swallowed, toxic in contact with skin, toxic if inhaled	7,600
Ethylene dichloride (EDC) (1,2--Dichloroethane)	8,2 mg/m^3 (+ skin notation in Annex III)	Production of plastic and vinyl products Also used as a solvent and added to leaded gasoline to remove lead.	Caused tumours in animal studies. Also: harmful if swallowed, causes serious eye irritation, causes skin irritation…	< 3,000
Complex PAH mixtures with benzo[*a*]pyrene as an indicator	**None** (skin notation in Annex III only)	Coal liquefaction, coal gasification, coke production and coke ovens, coal-tar distillation. Roofing and paving (involving coal-tar pitch) Wood impregnation and preservation. Aluminium production Carbon-electrode manufacture. Chimney sweeping	Tumours in animal studies Also: may cause an allergic skin reaction, genetic defects, damage fertility & the unborn child.	7,000,000
Used engine oils	**None** (entry in Annex I + skin notation in Annex III)	Used in automobile and motorcycle engines, diesel rail engines, marine engines, aeroengines, and in portable machinery including chain saws and lawn mowers	Skin cancer	1,000,000

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Diesel Engine Exhaust Emissions (DEEE) added in batch 2 ?

- Diesel current hot topic at EU level (Diesel gate)
- DEEE are a complex mixture of substances in the gaseous and particulate phases generated from the combustion of diesel fuel in diesel engines
- IARC group 1 (carcinogenic to humans) and also
  - ✓ inflammatory lung effects
  - ✓ cardiovascular effects
- over 3.6 million workers exposed in the EU: mining, construction workers, woodworking, professional driving, agriculture, car repair shops, etc.
- Controversy about carcinogenicity of Old vs New Diesel engines
- DEEE might be included in the Carcinogens Directive with a occupational exposure limit value to protect exposed workers (230,000 deaths could be avoided over the coming 60 years)

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COM proposal 2018/0081(COD) of 5 April 2018 = batch 3

Chemical agents	Proposed OELs	Relevant sectors	Types of cancer caused/other illnesses	No. of exposed workers
Cadmium and its inorganic compounds	0,001 mg/m³ (7 y transition at 0.004 mg/m³)	Cadmium production and refining, nickel-cadmium battery manufacture, cadmium pigment manufacture and formulation, cadmium alloy production, mechanical plating, zinc and copper smelting, mining of non-ferrous metal ores, etc...	Lung cancer, bladder cancer, kidney cancer and prostatic cancer Proteinurea, osteoporosis and respiratory effects	2,900 – 300,000
Beryllium and inorganic beryllium compounds	0,0002 mg/m³ (5 y transition at 0,0006 mg/m³)	Foundries, glass sector, laboratories.	Lung cancer, Chronic beryllium disease, allergy or asthma symptoms, beryllium respiratory and skin sensitisation, cardiovascular, renal effects,etc.	14,000 - 74,000
Arsenic acid and its salts, as well as inorganic arsenic compounds	0,01 mg/m³ (2 years extra transposition for the copper smelting sector))	Copper and zinc production, glass, electronics and chemical sectors	Lung cancer, skin cancer, liver cancer, lung cancer, bladder cancer, kidney cancer Peripheral neuropathy, cardiovascular effects and immunotoxicity, skin changes, etc	7,900 - 15,300
Formaldehyde	0,37 mg/m³ (+ notation on dermal sensitisation)	Formaldehyde manufacturing, building and construction works, manufacturing of leather and fur, pulp, paper and paper products, textile and wood and wood products, autopsy rooms	Nasopharyngeal cancer, leukaemia tumor induction Sensory irritation, potential cancer precursor effects	990,000 – 2,200,000
4,4-Methylene-bis(2-chloroaniline) MOCA	0,01 mg/m³ (+ skin notation in Annex III)	Plastics sector	Lung cancer, bladder cancer	350

Scope of application of CMD need to be extended to reprotoxic substances

- Reprotoxic substances cause severe health impact
- From relatively invisible exposures (latency period, situations lived as private drama, the link with working conditions is rarely investigated by doctors)
- With no business case for companies (most of the costs are supported by victims and society)
- Consistency with all the other field of EU legislation: REACH, pesticides, cosmetics, biocides, etc… ***Stop the double standard when workers health is at stake !***
- Global approach is needed in workplace prevention against the most highly hazardous substances

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Impact of including reprotoxic substances

- Health impact: reduce infertility, miscarriages, congenital malformations, childhood developmental disorders and ill health (including cancers)
- Equality impact: for chemical exposures – much more effective than the « pregnant workers » directive (where prevention starts only after the individual woman declaration that she is pregnant)
- 134 R 1A or 1B which are not classified as C or M 1A/1B. Among them many endocrine disruptors.
- Possibility to transform 11 existing Indicative OELs in Binding OELs in EU legislation

From reprotoxins to all substances of very high concern

- The same approach shoul apply to all substances of very high concern
  - Endocrine disruptors
  - Chemical sensitisers
  - Nanomaterials (NM)
  - …

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Strategy for eliminating work related cancer in Europe?

- Plan the future developments of the Carcinogens Directive
- Other fields of legislation (asbestos, non ionizing radiation, night work, ionizing radiation, long term effects of electromagnetic fields, etc…)
- Improve the applicability of EU legislation
  - Enforcement
  - Transparency of BOELs
  - Methodology for measuring BOELs
  - Taking into account combined exposures
- Dynamic synergy with market legislation
- Combining legislative and non legislative tools

Conclusions

- cancer is the first cause of death at work
- occupational cancers (and the huge associated costs for society) can be avoided
- EU legislation: a major battleground for eliminating work related cancer and other occupational diseases (asbestos, non ionizing radiation, night work, ionizing radiation, long term effects of electromagnetic fields, etc…)
- No EU specific legislation on MSDs or PSRs
- Legislative gaps for endocrine disruptors and NM
- Empowerment of workers is key for OSH improvements

Coming activities

- Brussels, 4-5 December: **ETUI Conference « Women, work and cancer »**
- On going initiatives on specific dimensions
  - Skin cancers
  - Cytostatic substances in the health sector
  - Breast cancer (important project in France)
- **ETUI HESAMAG n° 18**: thematic issue on cancer at the workplace (4th quarter 2018)
- Book “Work & Cancer: understanding occupational cancers and taking action to eliminate them” (December 2018)

- **EU-OSHA Campaign** Manage Dangerous Substances 2018-2019: https://healthy-workplaces.eu/en/campaign-partners/european-trade-union-confederation

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More information

- https://www.etui.org/Publications2/Guides/Preventing-work-cancers.-A-workplace-health-priority
- https://www.etui.org/en/Publications2/Working-Papers/Eliminating-occupational-cancer-in-Europe-and-globally
- https://www.etui.org/Topics/Health-Safety-working-conditions/Occupational-cancers
- https://osha.europa.eu/en
- https://echa.europa.eu/

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Thank you for your attention !

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