



WORKING AND HEALTH

LECTURE FOR MEDICAL
STUDENTS



WORK IS ENNOBLIG

- TO BE EMPLOYED HELPS TO FIND THE CREDIT WITHIN THE SOCIETY
- UNEMPLOYMENT IS ASSOCIATED WITH:
 - POVERTY,
 - DEPRIVATION
 - BARRENNESS



HEALTH CONSEQUENCES

- WORSE LIFESTYLE (MALNUTRITION, ALCOHOLISM, SMOKING, DRUGS ABUSE, POOR HYGIENE)
- PSYCHOSOMATIC DISEASES
- PSYCHIATRIC MORBIDITY



WORK AS A HEALTH RISK

- OCCUPATIONAL D.:
 - MAINLY AMONG WORKERS
 - CAUSE SPECIFIC
 - OCCUPATIONAL EXPOSURE IS ESSENTIAL
- WORK-RELATED D.:
 - LARGELY IN THE POPULATION
 - MULTIFACTORIAL
 - OCCUPATIONAL EXPOSURE MAY BE A FACTOR



THE SOCIAL APPROACH

- OCCUPATIONAL D.:
 - NOTIFABLE
 - COMPENSABLE
- WORK-RELATED D.:
 - MAY BE NOTIFABLE
 - MAY BE COMPENSABLE



OCCUPATIONAL HAZARDS

- FACTORS:

- MECHANICAL
- HEAVY PHYSICAL LOAD

- OUTCOMES:

- ACCIDENTS, INJURIES
- MUSCULOSCELETAL DISORDERS, INJURIES, LOW BACK PAIN



OCCUPATIONAL HAZARDS

- ERGONOMIC
- MONOTONY
- MUCSULOSCELETAL DISORDERS (D. FROM REPEATED OVERLOAD)
- MENTAL STRESS, LOWERED QUALITY AND PRODUCTIVITY
- D.FROM REPEATED OVERLOAD



PHYSICAL HAZARDS

- NOISE
- VIBRATION
- RADIATION
- EXTREME MICROCLIMATE
- HEARING LOSS
- PSYCHOSOMATIC D.
- TR.VASONEUROSI
- CANCER, RADIAT.D.
- CATARACT
- CVD,HYPERTHERM.
- CHILBLAINS



CHEMICAL HAZARDS

- DUSTS

- PNEUMOCONIOSIS
- SILICOSIS
- ASBESTOSIS
- BERYLLIOSIS
- SIDEROSIS

CHEMICAL HAZARDS



- WIDE SPECTRUM OF HUNDREDS COMPOUNDS
- INJURIES
- TOXICANTS
- CARCINOGENS
- ALERGENS
- TERRATOGENS



BIOLOGIC HAZARDS

- ANIMALS
- MICROBIAL AND VIRAL FACTORS
- PLANT ALLERGENS
- INJURIES,
- ANTROPOZONOS.
- INFECTIONS
- ALLERGIES
- ALLERGIES



PSYCHOLOGICAL STRAIN

- DIFFERENT STRESS FACTORS
- NEUROSIS
- DEPRESSION
- DISSATISFACTION
- CONFLICTS
- PSYCHOSOMATIC D.



WORK FACTORS AND WORK-RELATED D.

- BEHAVIORAL AND PSYCHOSOMATIC D.
- HYPERTENSION
- WORK OVERLOAD
- WORK UNDERLOAD
- SHIFT WORK
- CAREER DEVELOP.
- MIGRATION
- INTERPERSONAL CONFLICTS
- RESPONSIBILITY



WORK F. AND WORK RELATED D.

- ICHS

- STRESS

- EXPOSURE TO:

- CARBON MONOXIDE

- CARBON
DISULPHIDE

- PHYSICAL
OVERLOAD

- SEDENTARY WORK



WORK F. AND WORK-RELATED D.

- CHRONIC OBSTRUCTIVE PULMONARY DISEASE
- LOCOMOTORIC DISEASES
- IRRITANTS
- DUST
- ERGONOMIC F.
- WEIGHT BEARING
- TRAUMA
- VIBRATIONS, CONCUSSIONS

OCCUPATIONAL HAZARDS IN HEALTH PROFESSIONALS PRACTICE

- WHICH OF THEM CAN YOU FIND?



OCCUPATIONAL HAZARDS

- INFECTIOUS AGENTS
- X-RAY
- INJURY
- POSTURAL STRESS
- NOISE, VIBRATION



OCCUPATIONAL HAZARDS

- CHEMICALS:
- ORGANIC SOLVENTS
- CHEMICAL CARCINOGENS AND
TERRATOGENS (CHEMOTHERAPY,
ANESTESIOLOGY)
- ANORGANIC MERCURY



OCCUPATIONAL HAZARDS

- ALLERGENS:
- PROCAIN, MESOCAIN
- IODINE, FAMOSEPT, FORMALDEHADE
- SULFONAMIDES
- ANTIBIOTICS
- ACRYLATES, LATEX/RUBBER



OCCUPATIONAL STRESS

- sy. OF OVERFILL WAITING-ROOM
- LACK OF DRUGS
- LACK OF DIAGNOSTIC METHODS
- ADMINISTRATIVE OVERLOAD
- PATIENT 'S MOOD
- PATIENT 'S RELATIVES
- INTERPERSONAL RELATIONSHIPS
- SHIFT-WORK



OUTCOMES OF STRESS

- „BURN OUT“ sy.
- PSYCHOSOMATIC DISEASES
- ALCOHOLISM, SMOKING, DRUGS
- PSYCHIATRIC DISORDERS – SUICIDES
RR 2,0 (Finland, UK) – 4,0 (USA)



PROFESSIOGRAM 1

- TRY TO DEVELOPE THE WORKPLACE CHECKLIST FOR THE PATIENT WITH ICHS – MAN, 50 YEARS OLD
- WHICH RISK FACTORS WILL BE IMPORTANT FOR HIM?



PROFESSIOGRAM 1

- INCREASED HEART RATE, BLOOD PRESSURE, NEEDS OF OXYGEN:
 - STRESS (working time/shift, timing monotony work, noise, mental stress – responsibility)
 - ERGONOMY (outdoor/indoor workplace microclima, postural stress, physical overload)



PROFESSIOGRAM 1

- DECREASED SOURCE OF OXYGEN:
 - ENVIRONMENTAL TOBACCO SMOKE
(nicotine, carbon monoxide,
hydrocyanide)
 - CARBON MONOXIDE
 - CARBON DISULPHIDE



PROFESIOGRAM 2

- TRY TO DEVELOPE THE WORKPLACE CHECKLIST FOR PREGNANT WOMAN
- WHICH RISK FACTORS WILL BE IMPORTANT FOR HER AND FOR FETUS?



PROFESSIOGRAM 2

- INCREASED NEEDS FOR OXYGEN FROM THE 2nd TRIMESTER
 - STRESS
 - ERGONOMY



PROFESSIOGRAM 2

- DECREASED SOURCE OF OXYGEN:
 - POSTURAL STRESS
 - ENVIRONMENTAL TOBACCO SMOKE
 - CARBON MONOXIDE
 - CARBON DISULPHIDE



PROFESSIONGRAM 2

- EXPOSURE TO TERRATOGENS:
 - SMOKING + ENVIRONMENTAL TOBACCO SMOKE
 - ALCOHOL
 - THALIDOMID
 - ORGANIC MERCURY



PROFESSIONGRAM 2

- TERRATOGENS:
 - VIRAL/MICROBIAL INFECTIONS
 - X-RAYS
 - CADMIUM, LEAD
 - ORGANIC SOLVENTS
 - KOKAIN, HEROIN, MARIHUANA



PROFESSIONGRAM 2

- NOISE, VIBRATION
- LIPOSOLUBLE VITAMINES
- SOME DRUGS
- EL.MAG. WAVES
- POLYCYCLIC CHLORINATED HYDROCARBONS (PCBs, PCDDs, PCDFs)



PRIMARY PREVENTION

- CONTROL OF NEW HAZARDS
- CONTROL OF KNOWN HAZARDS
- SUBSTITUTION OF RISK FACTORS
- TECHNICAL CONTROLS TO MINIMASE EXPOSURE
- ADMINISTRATIVE CONTROLS



PRIMARY PREVENTION

- ENVIRONMENTAL MONITORING
- BIOLOGICAL MONITORING OF EXPOSURE
- IDENTIFICATION OF VULNERABLE PERSONS (pre-employed examination)
- PERSONAL PROTECTIVE DEVICES



SECONDARY PREVENTION

- SCREENING = EARLY DETECTION OF DELETERIOUS EFFECTS
- PERIODIC MEDICAL EXAMINATIONS
- TESTs OF CHEMICAL EXPOSURE:
 - measurement of chemical/metabolite
 - measurement of conjugates
 - measurement of body reactions



RESPONSIBILITY IN PREVENTION

- EMPLOYERs:
 - INFORMATION ABOUT RISKS
 - CONTROL FOR REDUCTION OF EXPOSURE
 - CONTRACT WITH PHYSICIANS
 - PROTECTIVE DEVICES



RESPONSIBILITY IN PREVENTION

- **PHYSICIANS:**
 - **INFORMATION ABOUT HEALTH RISKS OF OCCUPATIONAL HAZARDS**
 - **PERIODIC MEDICAL EXAMINATIONS + COLLABORATION WITH SPECIALISTS**
 - **PROPOSALS FOR WORKERS PROTECTION**



RESPONSIBILITY IN PREVENTION

- WORKERS:
 - ACCEPT THE INFORMATION AND ADVICES FOR SAFETY WORK
 - USE THE PROTECTIVE DEVICES
 - ABSOLVE PREVENTIVE MEDICAL EXAMINATIONS



RULES IN CZECH REPUBLIC

- HAZARDOUS WORKPLACES ARE STATUTED BY REGIONAL HYGIENIST
- LIMITS/NORMS ARE STATUTED BY GENERAL HYGIENIST
- OCCUPATIONAL DISEASES ARE DIAGNOSED BY SPECIALISTS IN REGIONAL OFFICES

