

***Occupational Renal
&
Reproductive
Diseases***

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Occupational Renal Diseases

- **Acute renal dysfunction:**

Acute tubular necrosis

Organic solvent – heavy metals – arsine

- **Chronic renal dysfunction:**

Chronic interstitial nephritis

heavy metals - Organic solvent – silica

- **Nephrotic syndrome:**

mercury

Important nephrotoxins

- *Metals:*

Lead – mercury – cadmium – chromium

- *Solvents:*

Halogenated hydrocarbon

CCl₄, trichloroethylene

Non Halogenated hydrocarbon

Toluene , phenol , monoethylether


- *Others:*

Arsine , silica , phosphors

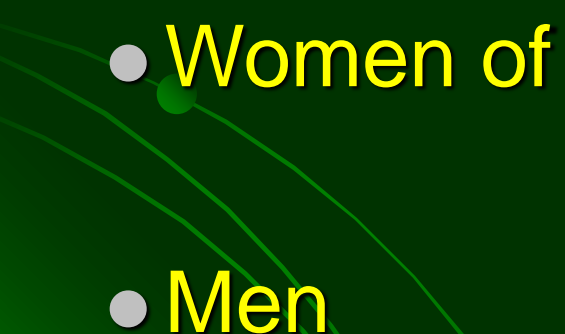
Screening Tests

- **BUN , Cr**: is inadequate do not become abnormal
until significant renal damage
- **High molecular weight proteinuria**:
Albumin , ferritin
- **Low molecular weight proteinuria**:
B2 microglobuline , Retinol binding protein
- **Enzymuria**:
N-acetyl glucose aminidase , LDH

Reproductive Toxicity

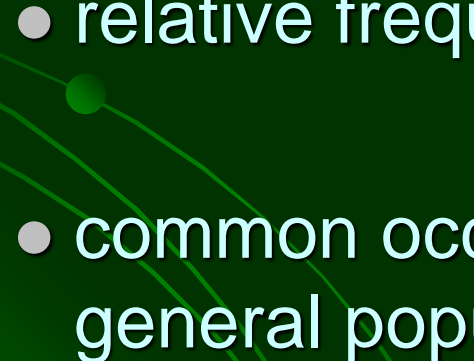
- First occupational reproductive hazard Percival Pott but not taken seriously until
 - 1975 lead exposed male workers in Romania 1977 DBCP in exposed male workers in California
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Reproductive Toxicity

- REPRODUCTIVE FUNCTION
 - Women Who Are Pregnant
 - Women of Child Bearing Age
 - Men
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Reproductive Toxicity

Difficulty in studying repro toxicity in women

- nature of the female cycle
 - relative frequency spontaneous abortions
 - common occurrence of birth defects in general population
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Adverse Male Reproductive Effects of Selected Agent

Agent	Out come	Strength
Alcohol	azoospermia	+
Boron	oligospermia	+
chloroprene	asthenospermia	++
Lead	Oligospermia	++
Mercury	Decrease libido	+
Microwave	oligospermia	+
Excessive heat	oligospermia	+
Ion-radiation	oligospermia	++

Adverse Female Reproductive Effects of Selected Agent

Agent	Out come	Strengt h
Arsenic	SAB-LBW	+
Carbon monoxide	SAB- menstrual dis	+
Mercury	SAB- LBW CNS malformation	++
Lead	SAB-infertility	++
Organic solvent	SAB- menstrual dis	+/?
VDT	SAB - BDs	--
Physical stress	Preterm LBW-SAB-	+/?