PROBLEMS OF BIOCOMPATIBILITY IN MODERN ORTHOPAEDIC IMPLANTS



CHEMICAL CARCINOGENICITY

- *There are 1,500,000 known compounds, of which
- *There are 2,000 compounds known to be carcinogenic in at least one animal, of which
- *There are 22 compounds <u>suspected</u> to be carcinogenic in man.
- *Biological activity does not imply carcinogenicity, thus most insecticides (unless contaminated with dioxin) are not carcinogenic in animals.

CARCINOGENICITY OF NICKEL AND COBALT COMPOUNDS

Compound	Animal	Route	Tumor Type
Ni	Rats	IM inj.	Fibrosarcoma
	Hamsters	IM impl.	Myeloma
NiO	Hamsters	IT inj.	
Ni ₃ S ₂	Rats	IM inj.	
Ni(CO)4	Rats, Man	Inhal.	
Co	Rabbits	IO impl.	Sarcoma
Co	Guinea Pig	IT inj.	Adenomatosis
CoS	Rats, mice	IM inj.	Sarcoma
Co-Cr	Rats	IM impl.	Sarcoma

NOTE: Rod implants found non-carcinogenic (Rats/2 years)

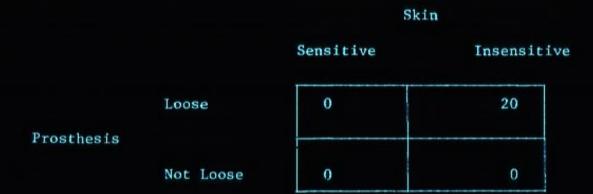
MCKEE-FARRAR THR

		Skin Sensitive Insensitive	
Prosthesis is	Loose	9(11 pros)	5
	Not Loose	0	24

Sensitive: to at least one: Ni, Co, Cr

EVANS ET AL, (1974)

MCKEE-FARRAR THR



Tests for: Ni, Co, Cr