

MEDICAL CONTROL OF OCCUPATIONAL LEAD EXPOSURE

Pre-employment examination

Complete throughout

Careful history

Previous occupations

Present subjective picture by systems

Careful physical examination

Special attention

(1) Gastro-enteric tract

(2) Vascular system

(3) Neuro-muscular

Laboratory procedures

Special attention to Blood

Hemoglobin

Differential leucocyte count

Stippling

Clinical urinalysis

Lead analyses when previous exposure in doubt

Purposes

Base line record

Suiting workman to job

Elimination of definitely unfit

Persons seriously exposed recently

Persons with vascular disease

Persons with hepatic disease

Persons with gastro-enteric sluggishness

Periodic Re-examination - periodicity determined by conditions

Interval History

Importance of subjective symptoms

Careful physical examination

Unhurried

Repetition of laboratory study

Blood - Stippling - hemoglobin

Urine - Clinical examination

Analytical examination if possible

Necessary if exposure dangerous

The importance of good records

Medical data for study - medico-legal consideration

Examination when required by illness

History important in relation to physicians
knowledge of plant

Necessity of arriving at a diagnosis, not merely
convicting or excluding occupational factors

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difficulties develop.

Diagnostic Criteria in Relation to Lead Intoxication

Lead Absorption

Stippling of Erythrocytes

Mean 339.18 per million erythrocytes

Upper limit not far from 1000 - rare person
higher

Quantitative information necessary

Stippling and lead exposure

abrupt changes significant

Stippling and other factors

Seasonal

Anemia

Other

Lead Line

Differentiation

Bismuth

Natural pigmentation

Increased lead excretion

Lead Poisoning

Actual illness characterized by

- (1) Gastro-enteric symptoms
- (2) Neuromuscular disturbance
- (3) Cerebral involvement

Associated with blood change

(If no stippling, no intoxication)

Sequellae

Neuro-muscular

Cerebral

Hematopoetic ?

AN EXPERIMENTAL STUDY OF LEAD ABSORPTION

The normal intake and output of lead

Lead intake and output under conditions of experimentally
induced lead exposure

Immediate response to increased intake

Relation to industrial lead exposure

Eventual response to increased intake

Threshold of intoxication not reached.

Abnormal absorption and excretion without
intoxication.

Correspondence of blood and urinary levels
to those seen in occupational lead exposure.

Comparison with results at H.R. plant.