

Acquired metabolic and toxic disturbances

- ① • Nutritional disorders
- ② • Metabolic disorders
- ③ • toxins

Environmental conditions that affect CNS
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can cause cognitive problem

* Can be treated especially if detected early

□ 1 Nutritional disorders

- (a) • Thiamine (B 1) deficiency
- (b) • Vitamin B12 deficiency

(a) Thiamine deficiency

(low vit. B1 levels)

- Thiamine def. causes Wernicke encephalopathy :

- ① Confusion
- ② Abnormal eye movements
- ③ Ataxia

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Symptoms of
acute B1
deficiency

-Treatment: thiamine.. Things go back to normal

(If) thiamine def. untreated: irreversible memory disturbances: Korsakoff syndrome. (Chronic problem)

Wernicke- Korsakoff

↓
acutely

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Chronic
manifestation

} related
to vit. B1
deficiency

Causes:

- Alcoholism - common cause

- Gastric disorders affecting thiamine absorption:
tumors, chronic gastritis

- Chronic vomiting

morphology

- Foci of haemorrhage and necrosis mainly in
mammillary bodies

(b) Vitamin B12 def

- Subacute combined degeneration of the
spinal cord
- Combined: ascending and descending tracts
affected
- Ataxia, lower extremity numbness and tingling
- Can progress to lower limb weakness

* Can affect memory

2 Metabolic disorders

1. Hypoglycaemia: effect similar to global hypoxia...hippocampal neurones and Purkinje cells first affected.
2. Hyperglycaemia: ketoacidosis or hyperosmolar coma: confusion then coma
3. Hepatic encephalopathy: decreased consciousness and coma due to increased ammonia, inflammation and hyponatremia.
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as a result
of hepatic failure (no detoxification)

3 Toxic disorders

- Alcohol
 - Ionizing radiation
 - Pesticides
 - Carbon monoxide
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- And many other toxic agents can affect the brain function