

1. **Disturbances in hormone metabolism** (s. p. 49)
 - Hypogonadism
(gonadotropins ↓, testosterone ↓, oestrogen ↑, zinc ↓)
 - Disturbance in T₃-T₄ conversion, TSH ↓
5-deiodase ↓ (hyperthyroid state of liver)
 - ACTH ↑, cortisol ↑
 - Renin ↑, aldosterone ↑
 - Catecholamines ↑
2. **Disturbances in vitamin metabolism** (s. p. 51)
 - Folic acid, B₁, B₂, B₆, B₁₂, C ↓
 - A, D, E, K, F ↓
 - Conversion disorders of retinol
 - Occurrence of toxic retinol intermediary products
3. **Disturbances in trace elements** (s. p. 53)
 - Zinc, selenium, copper ↓
 - Manganese ↓ (later, manganese ↑)
4. **Loss of electrolytes**
 - Potassium ↓, magnesium ↓
5. **Disturbances in cellular energy metabolism** (s. p. 48)
 - Hyperthyroid state of hepatocytes (see above)
 - Uncoupling of the respiratory chain due to stimulation of the sodium/potassium ATPase
 - Microsomal hypermetabolism
(O₂ consumption ↑, basal metabolism ↑, thermogenesis ↑)
6. **Increase in lipid peroxidation** (s. p. 73)
 - Glutathione ↓
 - Zinc, selenium, transferrin, ceruloplasmine/copper, cysteine, methionine, vitamins C, A, E ↓
 - Malondialdehyde equivalents ↑
7. **Alcoholic sympathicotonia**
 - Catecholamines ↑
(lipolysis ↑, glycogenolysis ↑, vascular reactions ↑)
8. **Alcoholic hypoglycaemia**
 - Glycogen reserves in liver cells ↓ (s. p. 45)
 - Gluconeogenesis ↓ (s. p. 45)
(inhibition of the citric acid cycle with a decrease in oxalacetate, alanine deficiency)
9. **Alcoholic hyperglycaemia**
 - Release of catecholamine ↑
 - Release of cortisol ↑
 - Inadequate insulin secretion
10. **Alcoholic hyperuricaemia**
 - Breakdown of purine nucleotides ↑
 - Acidosis/ketoacidosis
11. **Inhibition of pyruvate oxidation**
 - Hyperlactataemia → acidosis
 - Fatty acid synthesis ↓
12. **Increase in ketogenesis** (s. p. 46)
 - Ketoacidosis
13. **Disturbances in lipid metabolism** (s. p. 46)
 - Sympathicotonic lipolysis ↑ →, fatty acids ↑
 - VLDL production ↑ →, triglycerides ↑
(pre-β-lipoproteins ↓)
 - α-glycerophosphate ↑ →, triglycerides ↑
 - LCAT activity ↓ →, cholesterol ↑
 - Pyruvate ↓ →, fatty acid synthesis ↑
 - Cholinphospholipids ↓
 - Fatty acid oxidation ↓
14. **Disturbances in collagen metabolism**
 - Acetaldehyde ↑ →, collagen synthesis ↑
 - Proliferation of myoblasts, fibromyoblasts, monocytes, lymphocytes ↑ →, collagen synthesis ↑
 - Hyperlactataemia →, collagen synthesis ↑
 - Proline oxidase ↓ →, proline ↑
 - Collagenase ↓ →, collagen degradation ↓
15. **Disturbances in amino acid metabolism** (s. p. 42)
 - Consumption of cysteine ↑
 - Consumption of methionine ↑ →, α-aminobutyrate ↑
 - Consumption of glutathione ↑
 - Glutamic acid ↑ →, α-aminobutyrate ↑
 - Glutamic acid ↑ →, proline synthesis ↑
 - Reduction in BCAA
16. **Disturbances in protein metabolism** (s. p. 44)
 - Albumin synthesis ↓
 - Carrier proteins ↓ (e.g. transferrin)
 - Protein accumulation in the liver ↑
17. **Disturbances in porphyrin metabolism** (s. p. 38)
 - δ-aminolaevulinic acid synthetase ↑
 - δ-aminolaevulinic acid dehydratase ↓
 - Coproporphyrinogen oxidase ↓
 - Ferrochelataase ↓
 - Uroporphyrinogen synthase ↑
 - Uroporphyrin decarboxilase ↓
18. **Disturbances in neurotransmitter metabolism**
 - Disturbances in decarboxylation of biogenic amines
19. **Formation of addictive substances**
 - Salsolinol, tetrahydropapaveroline, β-carbolines