



Physiological Problems Caused by Alcohol Addiction

1. Malnutrition/Sub-optimum — Nutrition and Gut function.

- a. Alcohol depletes and destroys many nutrients e.g. antioxidants (especially Vit C) because of increased detoxification requirement, Mg and Zn, B Vitamins causing peripheral neuropathy (pain and tingling, loss of sensation) and myopathy (weakness), also Wernicke's encephalopathy (mental and behavioural changes, eye movement paralysis and unsteadiness) and Korsikoff's psychosis (short term memory impaired) specifically because of Vit B₁ deficiency, Folic acid deficiency anaemia common, latterly fat metabolism is disturbed and whence absorption of fat soluble Vitamins (ADEK), GLA synthesis is blocked in 40% of alcoholics. Vitamin D metabolism is affected and whence ability to use dietary Ca is impaired with ethanol inhibiting ostoblast proliferation and whence causing a decrease in BMD (Bone Mass Density) resulting in increased risk of osteoporosis, especially if alcohol abuse co-exists alongside an eating disorder.
- b. Digestion is disturbed because alcohol destroys the pancreas reducing its secretion of enzymes for proper digestion and insulin for proper blood sugar control. Pancreatitis with symptoms of pain and vomiting is common.
- c. Absorption is disturbed. An irritant, alcohol is a contributory factor to ulcer development (causing increased gastric juice and increased HCl) and increases the permeability of the gut leading to increased allergic response to other foods and ingredients alongside the ethanol being common intolerances. e.g. sulphites and yeast¹.

2. Reproductive impact.

- a. Preconceptually Men lose libido (40-90%), testes shrivel (10-75%), penis shrivels, semen and sperm decrease (they become infertile) and up to 60% experience feminisation because of their damaged livers inability to metabolise oestrogen. Women lose their periods or have heavy or irregular periods, 75% lose breast tissue, have reduced size sex organs and a dry vagina. Both decrease sexual performance.

1.) Obviously a diet rich in empty calories and poor blood sugar control is a recipe for obesity too however this is sometimes prevented by the appetite suppressive effect of alcohol and concurrent smoking activity which often accompany it. and absorption is disturbed.



b. Postconceptually

1. "Mother Ruin" (=Gin). Increased risk miscarriage (especially if used 2 days either side ovulation or conception — Wynn and Bryce Smith) and stillbirth.
2. (FAS) Foetal Alcohol Syndrome (Lemione,1968). Specific symptoms are small head, short nose, thin upper lip, indistinctive philtrum groove between upper lip and nose, flat cheeks and small eye openings. Non-specific symptoms are low birth weight, physical and mental retardation, low IQ, poor eye hand co-ordination, hearing and visual defects, heart murmurs, birth marks, hernias and urinary tract abnormalities. 30-50% of alcoholic women's babies have defects.

3. Poor Immune Function and Increased Cancer Risk.

- a. Low levels of NK cells and all lymphocytes especially T cells causing increased risk of infectious disease and cancer establishment and metastatic spread.
- b. High levels of oestrogen in chronic woman drinkers increases risk of breast and other hormone related cancers.
- c. Carcinogens in drinks e.g. (1) urethane (created by fermentation, storage and baking) in bourbon, fruit brandies, cream sheries, port., e.g. (2) aldehyde bi-product of mucosal cell alcohol dehydrogenase activity interferes with DNA repair. e.g. (3) converted by gut bacteria into secondary metabolites that cause colon cell proliferation. Excess alcohol consumption has been linked to cancer of the throat, mouth, larynx, pharynx, oesophagus, bladder, liver, breast, colon and rectum.
- d. 50% of alcoholics are allergic to rye, barley, egg white and milk.

4. Liver dysfunction and disease.

- a. Initially alcohol metabolism by 2 enzymes alcohol (mostly in liver) and aldehyde dehydrogenase (throughout body) to acetic acid results in fat accumulation in the liver and impaired function (detox and digestion etc.). Because women have less enzymes, more fat : water, usually less weight and slower gastric emptying (especially with the pill or menstruation) they have a higher concentration of alcohol to detoxify than men and need less to damage the liver in the short and long term. Only 5 -10% all alcohol abusers go on to develop cirrhosis. Hepatitis can occur 5 -15 years after abuse start and may lead on to cirrhosis.



- b. Portal/ Laennec's cirrhosis with or without symptoms occurs after 5 - 20 years with 20-50g of alcohol a day in women and 40-80g in men. Liver cells become disordered around blood vessels and blood flow stops, liver dies and ceases to function e.g. stops producing proteins and blood clotting factors, detoxifying female hormones etc.
- c. Liver cancer — only 10% cirrhotic sufferers go on to develop.

5. Cardiovascular Dysfunction and Disease.

- a. Link to heart arrhythmia's and sudden death through effect on heart muscle.
- b. Vitamin B₁ deficiency linked to heart disease development.
- c. Causes hypertension with strokes being 3 x more common in heavy drinkers and high incidence of subarachnoid haemorrhages.

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