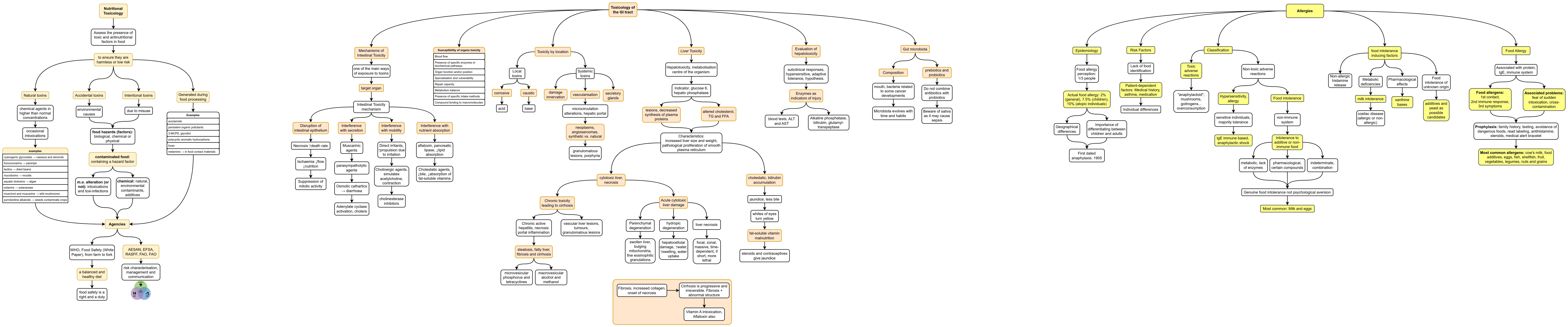
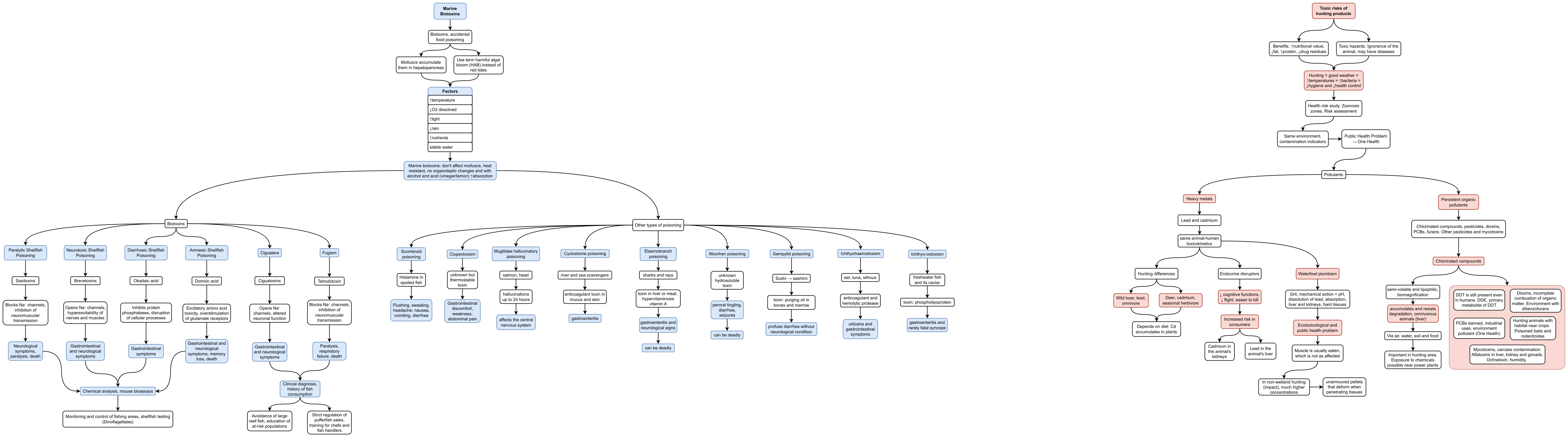
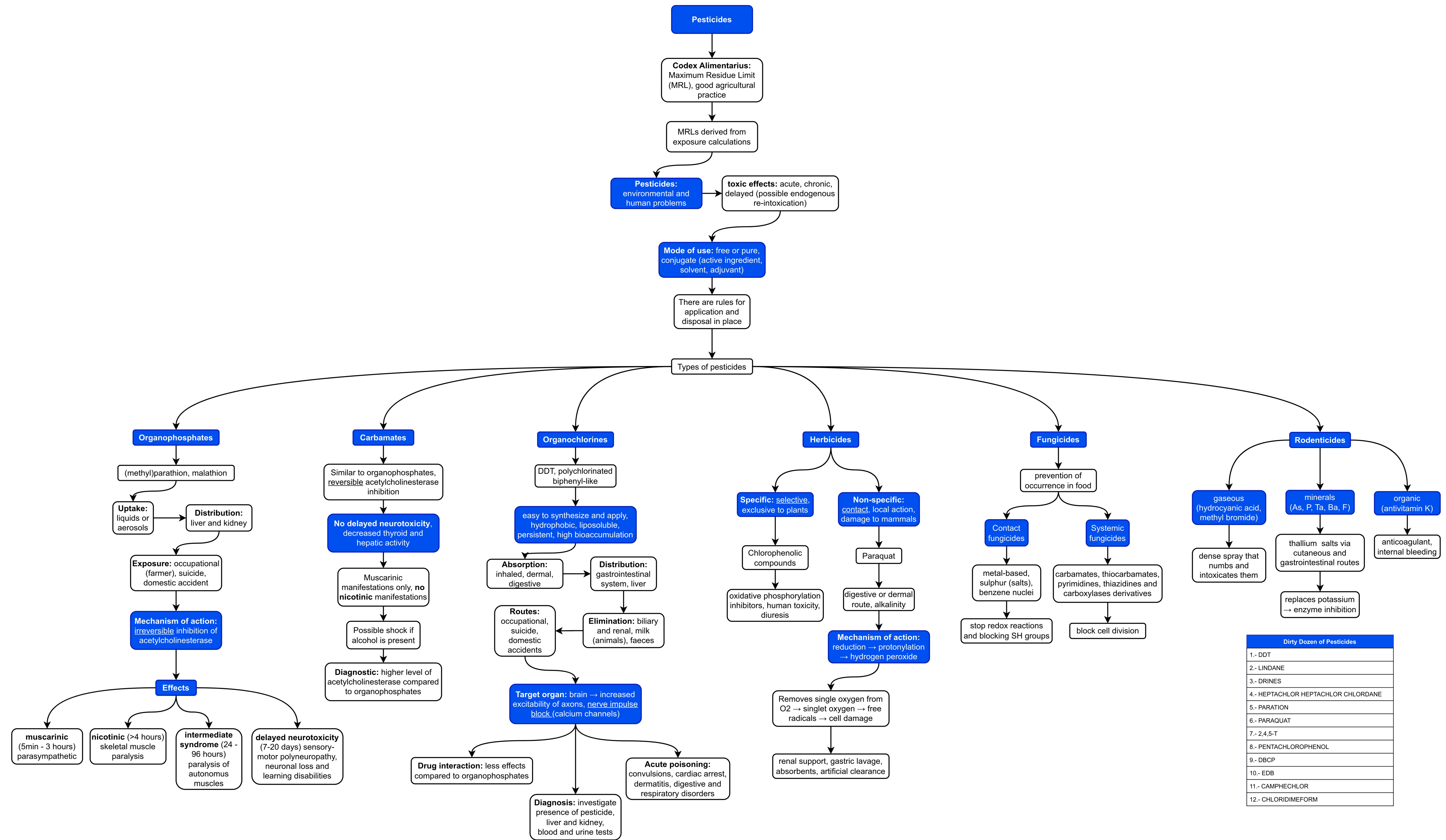
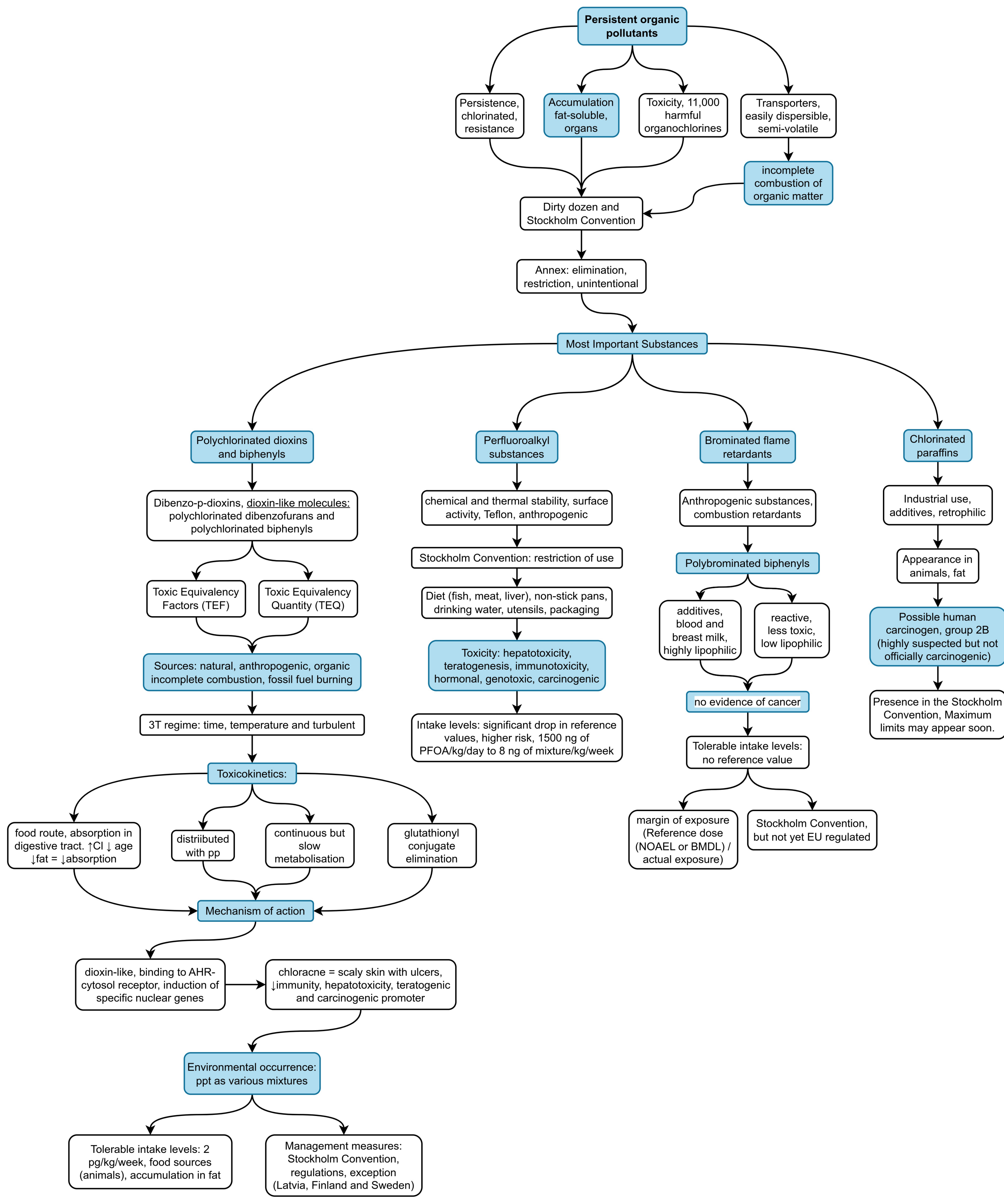
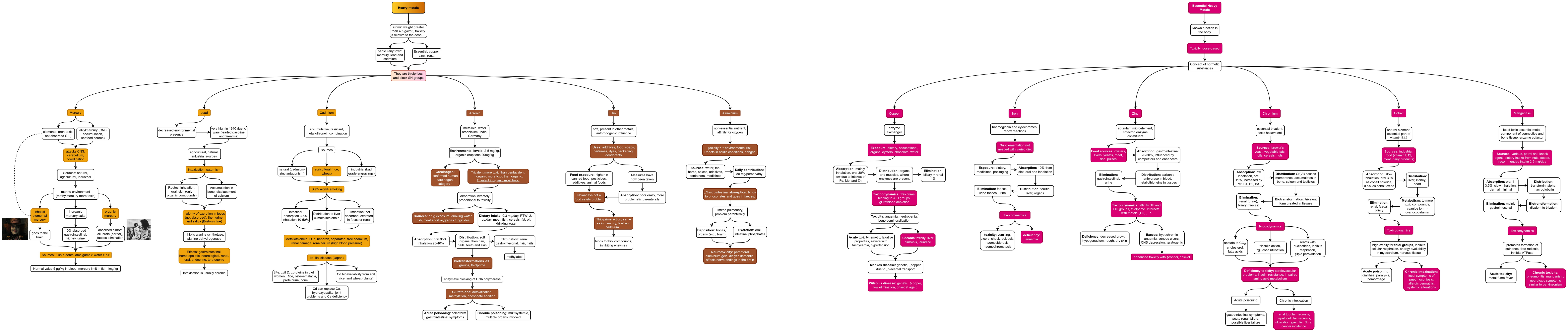


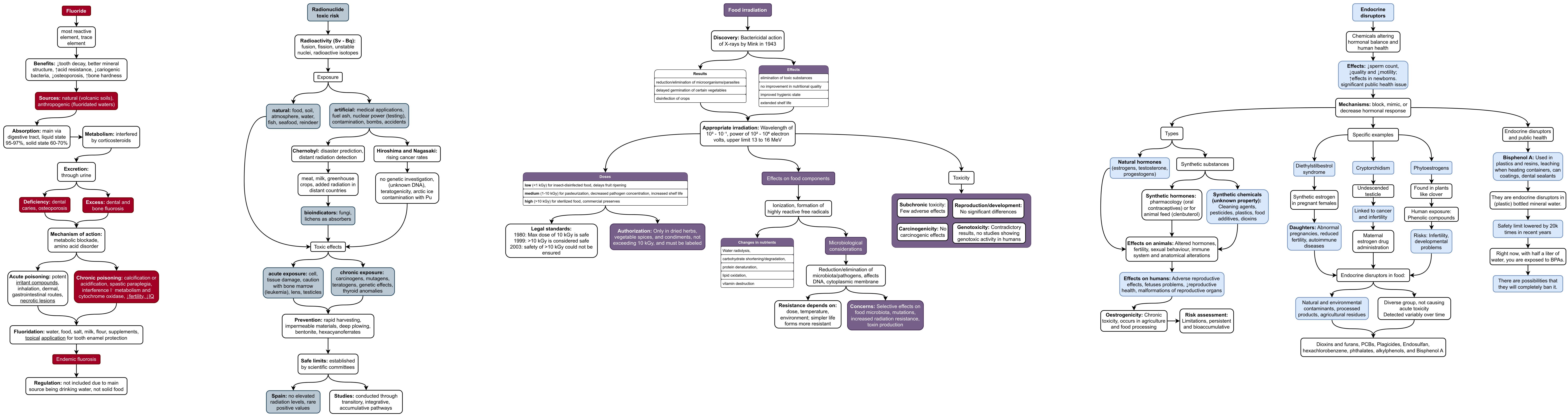






Dirty Dozen of Pesticides	
1.-	DDT
2.-	LINDANE
3.-	DRINES
4.-	HEPTACHLOR HEPTACHLOR CHLORDANE
5.-	PARATHION
6.-	PARAQUAT
7.-	2,4,5-T
8.-	PENTACHLOROPHENOL
9.-	DBCP
10.-	EDB
11.-	CAMPHECHLOR
12.-	CHLORIDIMEFORM





Toxic Mushrooms

Accidental poisonings due to resemblance

Confusion between poisonous and edible mushrooms

Cytotoxic, coliform, hemolytic, neurotoxic, hallucinogenic, intestinal irritant, disulfiram-like, carcinogenic, and miscellaneous mushrooms

Fast-acting mushrooms: appear 30-60 minutes, and are almost never deadly

Late-acting mushrooms: 8-24 hours post-ingestion, difficult identification

Hydrazine-containing mushrooms

Edible if dried or boiled, discard cooking water

Clinical: 6-9 hours after ingestion, nausea, vomiting, scarce diarrhea, hypotension, hemolysis, coma.

Nephrotoxic mushrooms

Small, reddish colour

toxins: orellanins, cortinarins

Latency 3-17 days, intense thirst, polyuria, weakness, renal failure.

Hepatotoxic mushrooms

Amanita phalloides, Galerita, Lepiota. 20-30 grams deadly

Amanita phalloides (Death cap)

Target organs: liver, kidneys, digestive tract

Toxins: cyclopeptides

Amatoxins: Resist cooking, long latency

cell damage, hepatic necrosis, renal tubular cell destruction.

Phalloxins: Destruction of hepatocyte membrane, long latency

abdominal pain, diarrhea, vomiting, liver, kidney, CNS damage, death.

Phalloidic syndrome:
1st phase of latency
2nd intestinal phase
3rd apparent improvement
4th visceral aggression phase.

Difficult diagnosis, suspected in autumn

Treatment using antagonists

prognosis: based on amount ingested, idiosyncrasy, age, time between diagnosis and treatment (6-10h)

Type	Mushroom - Toxin	Clinical Manifestations
Acute Gastroenteritis	similar to those from the supermarket	Nausea, vomiting, abdominal pain, diarrhea, dehydration
Neurological Poisoning	Isoxazole derivatives, ibotenic acid, musimol	Psychotropic activity
Hallucinogenic Mushrooms	Psilocybin, psilocin	Confusion, seizures, panic attacks, 30 minutes after ingestion
Muscarinic Poisoning	Muscarine, similar to pesticides + nicotinic effects	Cholinergic symptoms, diarrhea, tearing, sweating, blurred vision, bradycardia
Cardiovascular Poisoning	Coprine. Interferes with alcohol and ↑ acetaldehyde	Nausea, vomiting, flushing, arrhythmias, sensation of dry mouth
Hemolytic Poisoning	Thermolabile hemolysins	Asymptomatic mild hemolysis, if well-cooked (Ramen soup)

Higher fungi

Great toxic risk, low consumption in daily diet

Type of Toxic Fungi	Examples	Effects/Toxins	Mortality/Effects
Cytotoxic Fungi	Amanita, Galerina, Lepiota	Cyclopeptide toxins, Sulciceps gene toxins, Orellanin, Gyrometrin	Amanita Phalloides (phalloidic syndrome), Galerina sulcipes (most deadly - 80% mortality)
Hemolytic Fungi	Gyromitra, Amanita, Polytichia, Paxillus	Unknown femolytic factors	Hemolytic anemia after 4 days
Neurotoxic Fungi	Amanita, Inocybe, Clitoyibe	Muscarine, Acetylcholine, Muscimol	Acute neurological symptoms, respiratory paralysis (4% mortality)
Hallucinogenic Fungi	Psilocybin mushrooms	Psychedelic effects, prolonged euphoria, excitement, temporary paralysis	Not fatal in adults, potentially fatal in children
Gastrointestinal Irritant Fungi	Boletus, Agaricus, Lactarius	Toxins of unknown nature	Severe poisonings in children
Carcinogenic Fungi	Gyromitra, Agaricus, Polyporus	MHF (Methyl Hydrazine), other hydrazones, Nitrosamines	Tumor formation in mice

Fungal poisonings: Fast treatment is required and it appears due to similar morphology of many species

Mycotoxins

Fungi, eukaryotes, yeasts, molds

Aflatoxins, Ochratoxins, Fumonisin

Affect liver, kidneys, CNS, endocrine, immune systems

Chronic toxicity more in young animals

types

Aflatoxins

Product of Aspergillus flavus fungus

Turkey X disease: 1960, 10k dead turkeys

Aflatoxin types: 18, AFM1 most toxic

Toxicity: Affects liver, kidney, brain; carcinogenic, teratogenic, mutagenic; hepatotoxic syndrome, kidney problems, immunosuppression

Aflatoxicosis: poisoning effects

Acute: necrosis of liver cells, oedema of the lower extremities, liver lesions, growth impairment.

Chronic: jaundice, liver cirrhosis, decreased appetite, reduced growth, abortions, and fetal deformities

Protective factors: ↑lipid ↑protein diet, liver rich in unsaturated fatty acids

Analysis: Thin-layer chromatography

Prevention: No safe levels in food, maximum limits for AFM1 in milk and peanuts

Measures to reduce exposure: Good farming practices, storage, feed care, cereal treatment with antifungals

Aflatoxin in food:
Maize
Peanuts
Cassava
Pistachios
Chestnuts
Nuts
Figs
Spices
Watermelon seeds
Sausages
Wines
Legumes
Milk
Dairy products (AFM1)

Ochratoxins

Aspergillus, Penicillium, warm and cold climates

Ochratoxin A (OTA): Most toxic, tolerable daily intake 5 ng/kg/day

remains in body for 35 days, binds to PP, accumulates in liver and kidney, excreted in urine, passes into breast milk

Properties: Carcinogenic, nephrotoxic, teratogenic, genotoxic, immunotoxic, possibly neurotoxic

Foods with OTA: legumes, barley, coffee, cocoa, nuts, pork (sausages and kidneys), spices, cereals, red wine

Regions with high OTA intake: Middle and Far East, Africa (warmer countries)

Detection: Thin-layer chromatography, HPLC, electrophoresis

Prudent to reduce exposure: Lower end of TDI scale 1.2 - 14 ng/kg

Fumonisin

Fumonisin B1, produced by Fusarium, maize, and grains

Properties: Hepatotoxic, nephrotoxic, unproven carcinogen

↑cases of esophageal cancer in South Africa, China, and northern Italy

Analysis methods in maize: thin-layer chromatography, HPLC, electrophoresis

Ergotism: caused by ingestion of alkaloids produced by fungi of the genus Claviceps, affecting humans and animals

