

PESTICIDE POISONING — SUICIDES/HOMICIDES/ACCIDENTAL

- Approximately 800,000 people die globally due to suicide.
- Among them, around **30% of suicides** are due to pesticide poisoning, mostly among rural agricultural areas in low and middle income countries.
- In countries with low and middle income, self-poisoning with pesticides is a major public health problem.
- It was further reported that people dependent on agriculture for livelihood are increasingly committing suicide using pesticides

PESTICIDE POISONING — SUICIDES/HOMICIDES/ACCIDENTAL

- In Southern India, the suicide rates have been reported to be high.
- From **1986 to 2005**, 1741 people committed suicides in a population of about 100,000.
- Two most common methods used to commit suicide have been **hanging and poisoning**.
- Hanging was chosen by older people and poisoning by people aged 40 years and younger.
- More males preferred poisoning to commit suicide compared to females

PESTICIDE POISONING — SUICIDES/HOMICIDES/ACCIDENTAL

- Pesticides are common agents used for homicides and suicides in developing countries.
- Suicide in low- and middle-income countries is not only a medical and public health problem but is also related to economics and culture.

CANCER

- The risk of cancer, such as leukaemia and lymphoma, increases in individuals who are exposed to high levels of pesticides.
- This is especially true for individuals engaged in farming or employed in industry. According to the International Agency for Research into Cancer (IARC), individuals spraying pesticides regularly are at a slightly increased risk of contracting cancer.

Cancer

- The wider use of pesticides in the community has led to increased controversy.
- Research has shown that a strong relationship exists between pesticide exposure and cancer development, especially in children.
- This was found to be particularly true for **brain cancer** and **prostate cancer**.
- Studies have also found that children of workers exposed to pesticides at work are more likely to develop **kidney cancer**
- This is particularly true for high and prolonged exposures

CONGENITAL MALFORMATIONS (birth defects)



Before

After

CONGENITAL MALFORMATIONS (birth defects)

- Paternal exposure to pesticides, such as, aliphatic hydrocarbons, inorganic compounds, and glufosinate, led to a possible risk of congenital malformations.
- However, it did not find an increased risk for paternal exposure to pesticides in the classes of organophosphates, carbamates, organochlorines, chloroalkylthio fungicides, and organosulphurs

CONGENITAL MALFORMATIONS (birth defects)

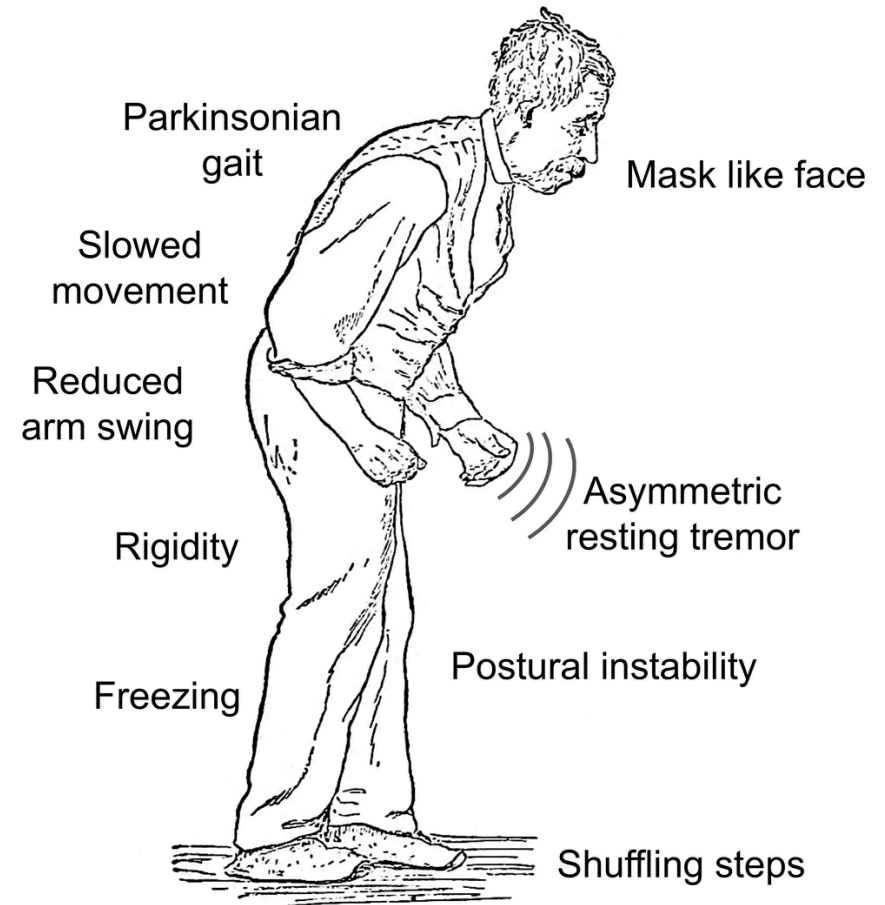
- Following are the common birth defects that emerged from the review
- **Cryptorchidism:** A condition in which one or both testes fail to descend normally.
- **Hypospadias:** An abnormality of the penis in which the urethra opens on the underside.
- **Spina bifida:** Defects in the spinal cord and in the vertebrae caused by the incomplete closure of the neural tube.



NEUROLOGICAL DYSFUNCTIONS

Parkinson's Disease

- **Parkinson's Disease. Parkinson's disease** is a brain disorder that leads to shaking, stiffness, and difficulty with walking, balance, and coordination.
- There is increasing evidence that chronic exposure to moderate levels of pesticides is neurotoxic and it increases the risk of Parkinson's disease.



Alzheimer's Disease

- **Alzheimer's disease** is a type of dementia that causes problems with memory, thinking and behavior.
- Occupational exposure to unspecified pesticides and fertilizers with the risk of Alzheimer's disease
- Comprehending the relationship between pesticide exposure and Alzheimer's disease is difficult because in Alzheimer's disease the basic neurochemical defect is the loss of cholinergic neurons.

