



GUIDELINES for emergency measures in cases of crop protection product poisoning



Global
**Crop
Protection**
Federation

IT SHOULD BE CLEARLY
UNDERSTOOD THAT THESE
GUIDELINES ARE INTENDED TO
COMPLEMENT THE REQUIREMENTS
OF ANY LOCAL AND NATIONAL
LAWS AND REGULATIONS.

THESE GUIDELINES HAVE BEEN
PREPARED ESPECIALLY FOR THE
MANAGEMENT OF CASES OF
POISONING AND OVER-EXPOSURE
WHERE MEDICAL FACILITIES MAY
BE LIMITED.

THE INFORMATION CONTAINED IN
THIS PAMPHLET IS ACCURATE TO
THE BEST OF THE KNOWLEDGE OF
GCPF, BUT NO LIABILITY CAN BE
ACCEPTED WHATSOEVER IN
RESPECT OF THE USE OF THIS
INFORMATION NOR IN RESPECT OF
ANY ADVICE CONTAINED HEREIN.

GUIDELINES
for emergency
measures in
cases of crop
protection
product
poisoning

CONTENTS

Page

- 1. Introduction**
- 2. Recognition of poisoning**
- 3. First aid management at the scene of incident**
- 4. Guidelines for physicians and nurses**

Appendix I

Appendix II

Addresses

Bibliography

Notes

Introduction

Crop protection product use

Crop protection products are biologically active chemicals, which have been thoroughly tested for safety and usefulness before they are released for agricultural use. If misused they may be harmful to yourself, your animals and your environment. Adhere strictly to label instructions to prevent harmful effects. In order to be used safely and effectively, crop protection products should be handled and used in accordance with the manufacturer's recommendations.

This booklet provides simple instructions for first-aid management if over-exposure to crop protection products should occur, and gives guidance to medical personnel in the subsequent handling of poisoning cases. Safe methods of handling, storage and application of crop protection products are described in GCPF's (GIFAP's) «Guidelines for the safe formulation and packing of crop protection products», «Guidelines for the safe transport of crop protection products», «Guidelines for the safe warehousing of pesticides» and «Guidelines for the safe and effective use of crop protection products».



Always read the label and get advice before using a crop protection product

Hazards

No chemical is entirely without risk, but there are safe ways of using them, therefore:

- **Read the entire label carefully prior to use;**
- **Handle, store and apply crop protection products only as recommended on the label or as directed in companion GCPF (GIFAP) manuals.**

Prevention of poisoning

REMEMBER: PREVENTION IS BETTER THAN TREATMENT!

Crop protection products may produce local effects when they come into contact with the body, or more widespread general effects after they have actually entered the body. Crop protection products may enter the body in three ways:

- **Skin penetration**
- **Swallowing**
- **Inhalation**

To prevent poisoning occurring, avoid all three ways of entry.

REMEMBER: PREVENTION IS BETTER THAN TREATMENT!

Skin penetration

The skin does not act as a complete barrier, and crop protection products may be absorbed into the body if skin contact occurs.

- **Watch out for skin contact;**
- **Avoid skin contamination as far as possible;**
- **Should contamination occur, wash exposed skin.**

Swallowing

This mode of entry is likely to produce more severe poisoning. It may occur accidentally and great care must be taken to prevent such ingestion, particularly in

children who may mistakenly drink crop protection product solutions, which have been improperly stored and labelled.

- **Eliminate risks of swallowing crop protection products by proper storage in original containers;**
- **Do not transfer crop protection products from their original containers into unlabelled bottles, etc.,**
- **Do not eat, drink or smoke whilst working with crop protection products;**
- **Do not contaminate food and drink with crop protection products;**
- **Do not use empty containers for storage of food and/or drink;**
- **Do not store crop protection products in food and/or drink containers;**
- **Keep children away from crop protection product stores and work areas.**

Inhalation

Crop protection product formulations may produce fumes or dusts, which can be absorbed through the lungs during handling.

- **Ensure that mixing takes place outside or in well ventilated areas;**
- **Take great care when opening crop protection product containers;**
- **Take great care when pouring concentrate;**
- **Stay clear of spray mists.**



Protect against all possible ways of contamination

REMEMBER: PREVENTION IS BETTER THAN TREATMENT!

Read the companion GCPF (GIFAP) manuals «Guidelines for the safe formulation and packing of crop protection products», «Guidelines for the safe transport of crop protection products», «Guidelines for the safe warehousing of pesticides» and «Guidelines for the safe and effective use of crop protection products» and follow the recommendations given.

Equipment requirements

The following provisions at the workplace help to combat over-exposure and poisonings:

Water

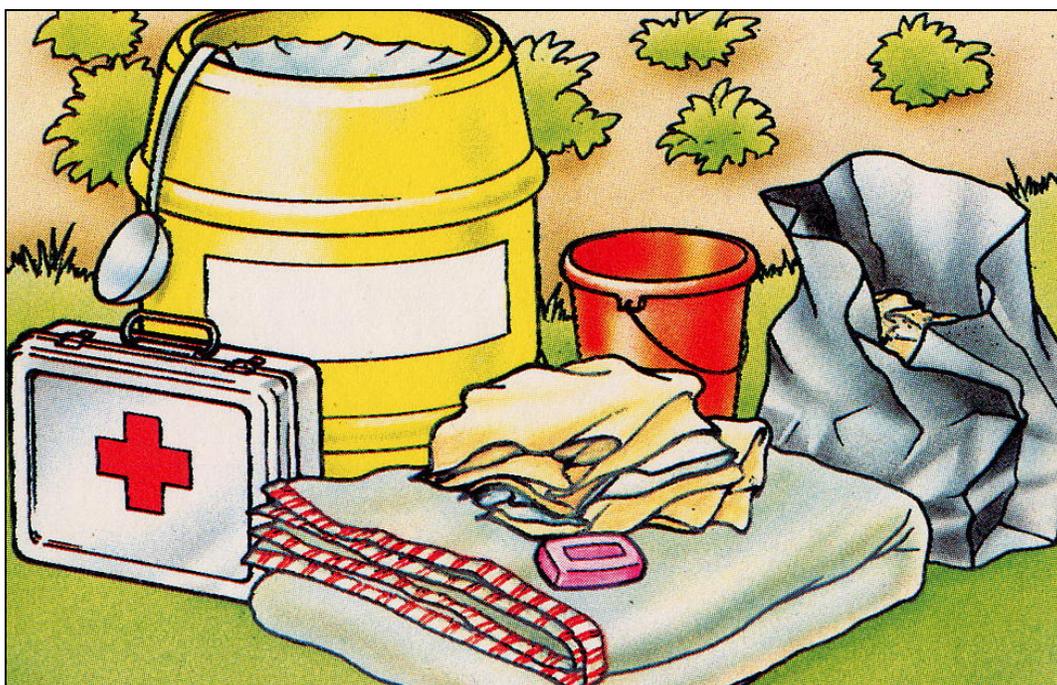
Water must always be available where concentrate is handled or mixed. It serves equally well for washing contaminated skin and eyes, therefore set plenty of clean water aside.

Soap

Keep bars of soap available for washing.

Cloths

Keep a plentiful supply of clean, dry cloths or paper for wiping crop protection product off the skin, if water is not readily available.



Keep emergency equipment near spraying site

Blanket

Useful for cover in case of shock.

Activated charcoal

Useful in some instances where crop protection product has been swallowed.

Plastic container

For storage of contaminated clothing or footwear.

Medical assistance

Pre-plan for emergencies, determine the best and quickest way of obtaining medical help or transporting a patient to a medical centre.

2. Recognition of poisoning

General remarks

Crop protection product poisonings are usually of an acute nature, and as a rule result from extensive skin contact or ingestion. If you believe that somebody has been poisoned by a crop protection product - **IMMEDIATELY GIVE FIRST AID AND SEEK MEDICAL ASSISTANCE AS INDICATED IN SECTION THREE.**

Signs and symptoms

Due to the various types of crop protection products and the different ways of absorption, crop protection product poisoning can present itself in many different ways. Other illnesses, notably infections or conditions caused by excess heat can mimic poisoning. It is therefore important to seek medical advice if at all possible. The features listed below call for immediate attention and point to the possibility of crop protection product poisoning.

| | |
|---------------------------|---|
| General | Extreme weakness and fatigue. |
| Skin | Irritation, burning, excessive sweating, staining, etc., |
| Eyes | Itching, burning, watering, difficult or blurred vision, narrowed or widened pupils, etc., |
| Digestive system | Burning in mouth and throat, extreme salivation, nausea, vomiting, abdominal pain, diarrhoea, etc., |
| Nervous system | Headaches, dizziness, confusion, restlessness, muscle twitching, staggering gait, slurred, speech, fits, unconsciousness, etc., |
| Respiratory system | Cough, chest pain and tightness, difficulty with breathing wheezing, etc., |

In difficult cases it is important to utilise all the information available when analysing if a person's condition is related to crop protection product exposure. Consideration must be given to the possibility of other concurrent diseases.

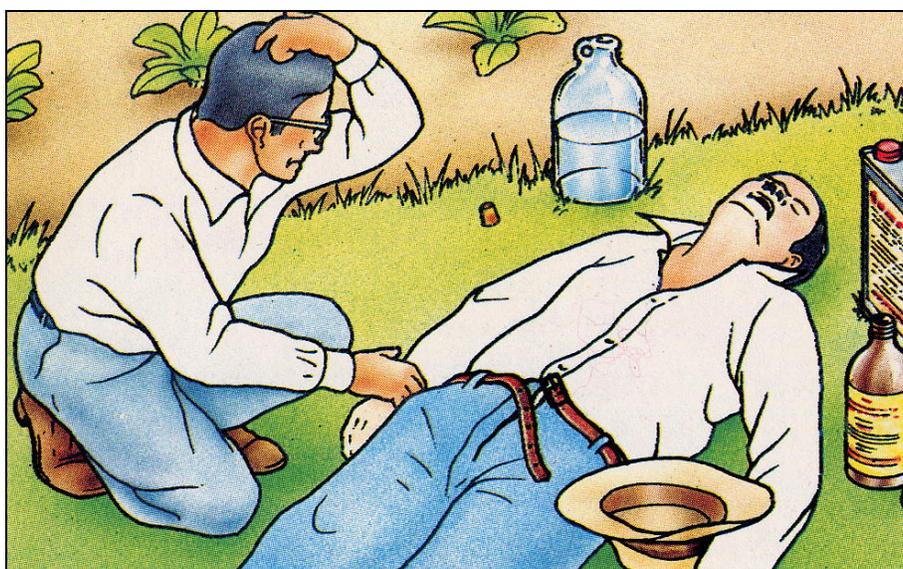
ASK

- the person concerned and workmates, if contamination has occurred or even if work with any chemical has taken place;
- what product has been handled and in what quantity;

- when and for how long handling took place;
- what protective clothing has been worn;
- what type of ill effects have been noticed;
- if alcohol or medicines have been taken.

LOOK

- for evidence of crop protection product containers, labels or spray equipment retain all labels carefully);
- for evidence of exposure and / or spillage onto ground or clothing;
- for defective and faulty equipment;
- at the patient's condition.



First aid begins with identification of the problem

SMELL

- many crop protection product formulations have a characteristic smell which will normally be noticeable if contamination to any great extent has occurred.

If over-exposure to a crop protection product is suspected, give first aid as indicated in Section Three. Seek medical advice as soon as possible. Inform the attending doctor or medical centre of the patient's history and your observations. If available, hand over the label.

If, on the other hand, illness is suspected, obtain medical attention in the usual manner and inform the attending doctor of the contact with crop protection products.

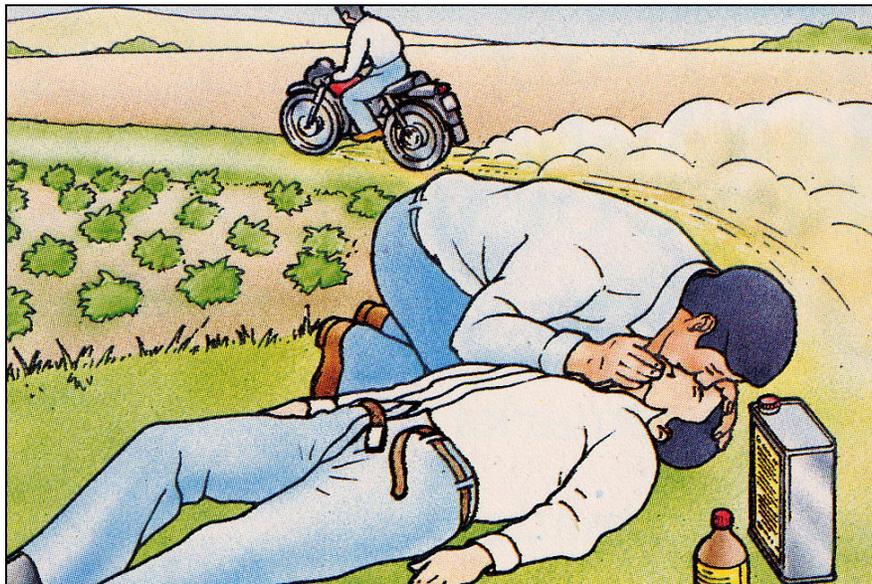
3. First aid management at the scene of incident

General remarks

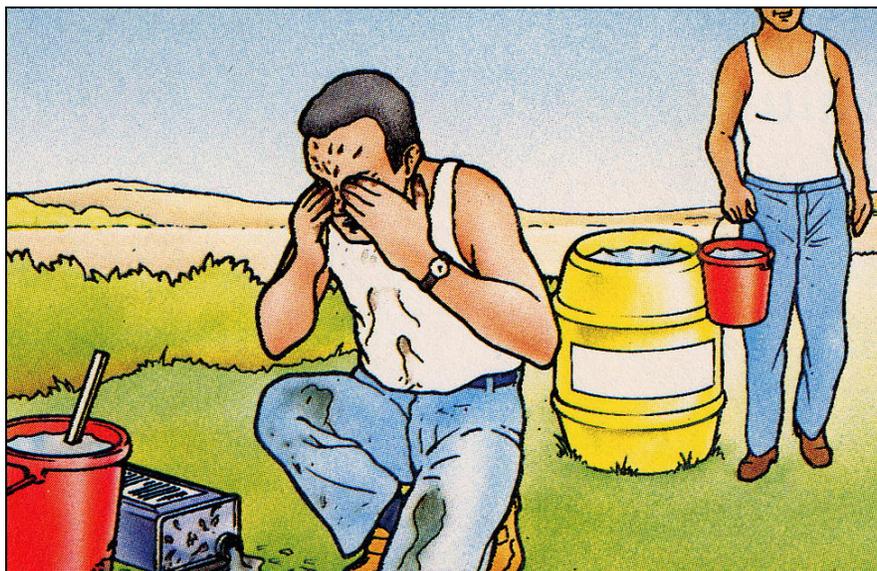
SPEED IS ESSENTIAL - DO NOT WAIT FOR EXPERT HELP.

ACT • calmly and methodically. Avoid self-contamination during treatment.

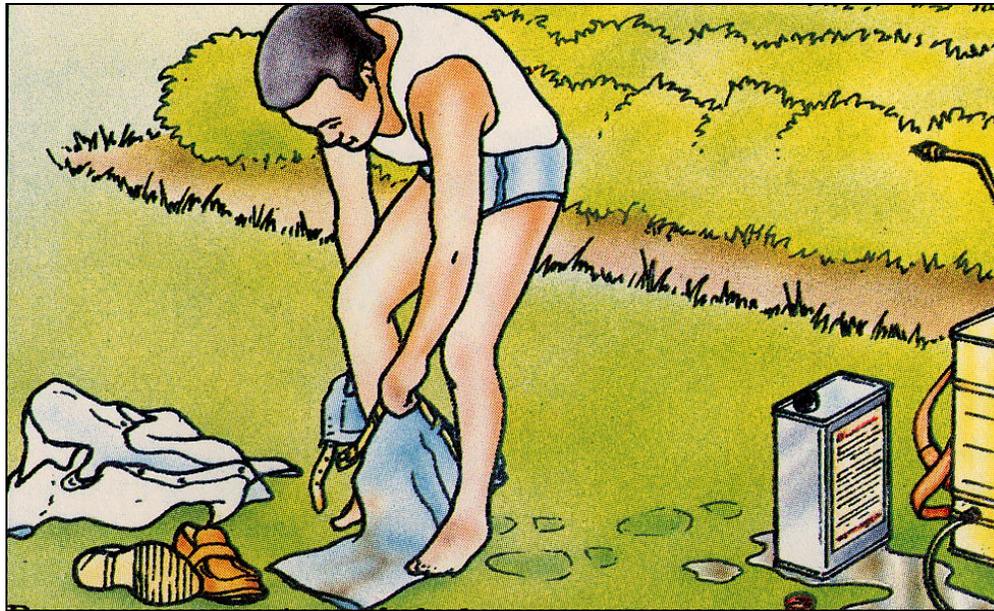
ACT • according to the patient's needs. The highest priority is adequate breathing. It **MUST** be maintained continuously.



Treat patients according to priorities....breathing comes first....



....eye injuries second, others third

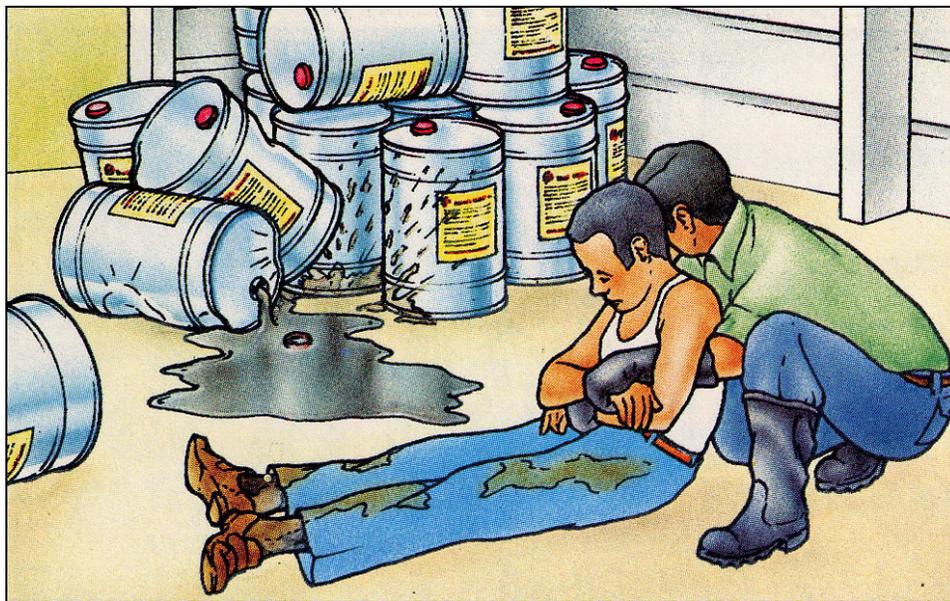


Remove contaminated clothing quickly and remember to seek medical advice

Decontamination

TERMINATE EXPOSURE by removing the person from the scene of spillage or other contamination. Avoid further skin contact and/or inhalation of fumes or dust.

REMOVE CONTAMINATED CLOTHING quickly and completely, including footwear. Collect clothing in separate container for washing before re-use. Discard contaminated leather footwear.



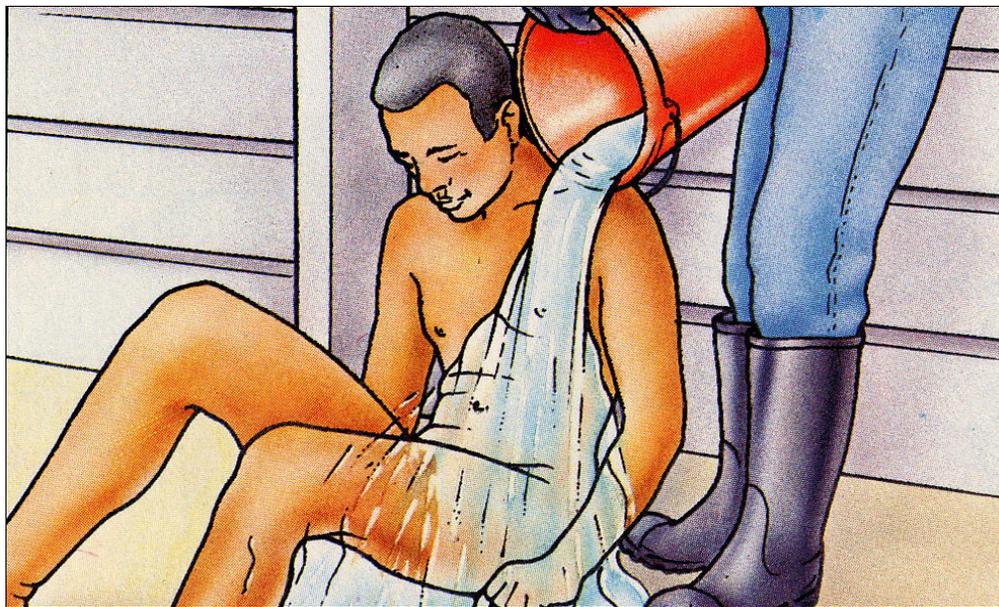
Remove patient from spillage site



Take off contaminated clothing

REMOVE CROP PROTECTION PRODUCTS FROM SKIN, HAIR AND EYES by using large quantities of water. Pay particular attention to the washing of eyes, hold eyelids apart and rinse thoroughly for at least 10 minutes. Immerse patient in a pool if possible, or shower the body completely with water for at least 10-15 minutes.

Do not look for special washing solutions. If no water is available, dab or gently wipe the skin with cloths or paper which should then be destroyed. Avoid harsh rubbing or scrubbing the skin.



Rinse contamination from the body surface



If water is not available, wipe skin with cloth

First aid treatment

1. General

Continuous calm reassurance of the patient is necessary throughout, as he may tend to become extremely agitated. Keep patient strictly at rest; organophosphorus and carbamate insecticide poisonings are made worse by movement.

Close observation of breathing and consciousness is essential.

Poisoned patients may become unconscious, may vomit and may stop breathing suddenly.

Placing a patient in the proper position will help to combat the danger of these complications.

2. Position

Place the patient on his side with the head lower than the rest of the body and turned to one side. If the patient is unconscious, keep the chin pulled forward and the head back to ensure that breathing can take place.

3. Temperature

Particular care must be given to temperature control in unconscious patients. If the patient is extremely hot and sweating excessively, cool by sponging with cold water. If he feels cold then cover him with a sheet or blanket to maintain normal body temperature.

4. Swallowed crop protection product

Induction of vomiting is generally not to be recommended as a first aid measure, *unless* the chemical swallowed is highly toxic, likely to prove fatal and medical assistance is not readily available. Read the product label for indications as to whether or not vomiting should be induced or to determine if the product is highly toxic. "Skull-and-cross bones» or «red hand» pictogrammes, indicate such toxicity

Induction of vomiting should only be carried out on conscious patients. If it is considered necessary, proceed as follows

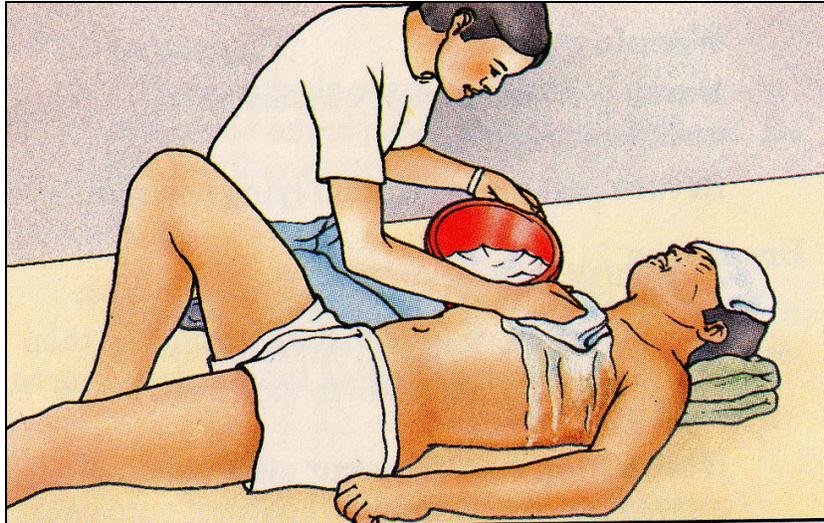
Sit or stand patient up.

Induce vomiting by tickling the back of the patient's throat with two fingers. Use two fingers of the other hand to force the patient's cheek between his teeth. This avoids one's finger being bitten.

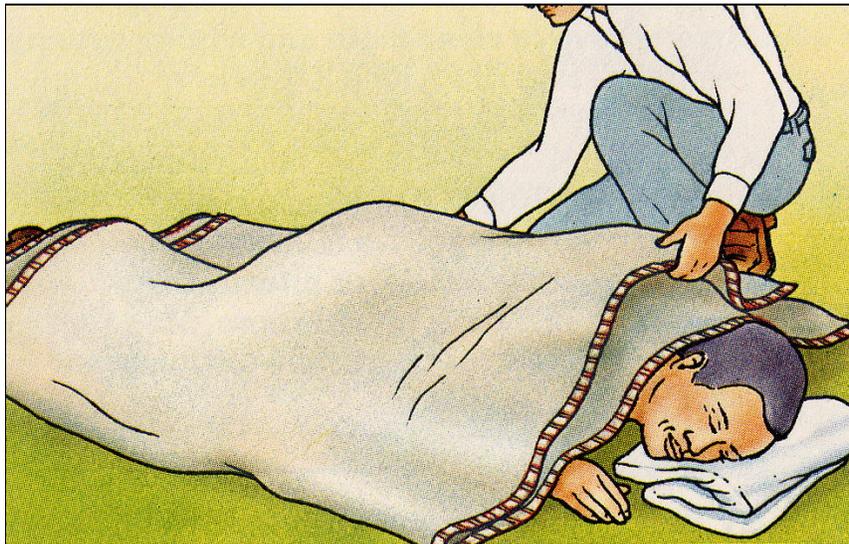
After vomiting has occurred or if induction is unsuccessful, make the patient drink 3 tablespoons of activated charcoal in half a glass of water. Repeat as often as possible until medical attention is obtained.



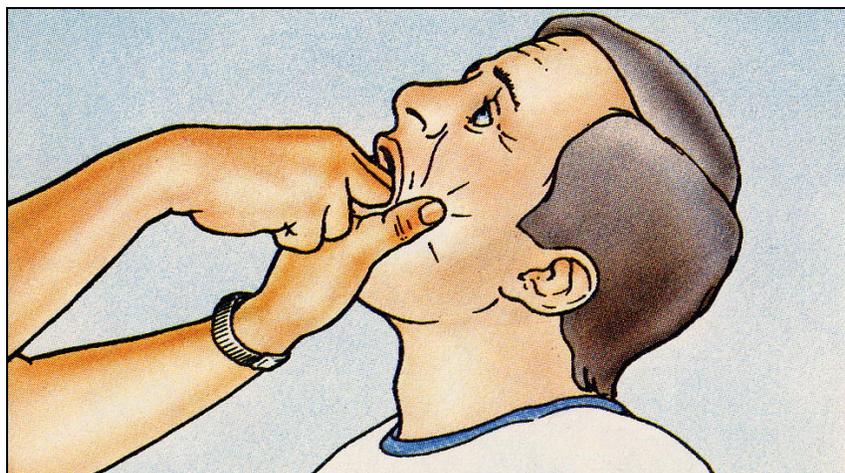
Place an unconscious patient on his side, tilt the head back



Control overheating with cold water



Control cold with a blanket



Induce vomiting when patient is in an upright position by tickling the throat

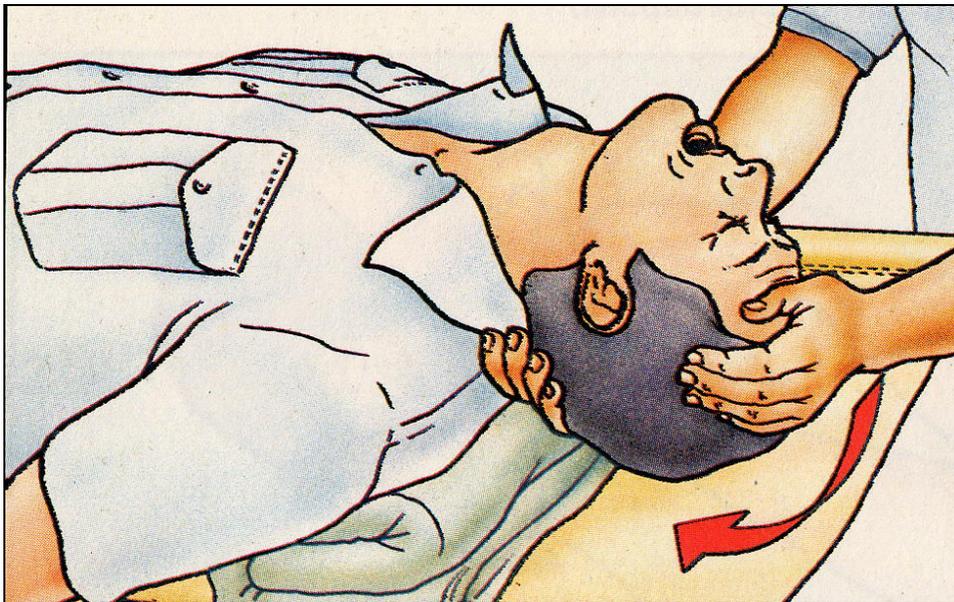
Warning: Never feed anything orally by mouth to an unconscious patient!

Lie patient down in original position.

5. Breathing

Watch continuously. If breathing STOPS (patient's face or tongue may turn blue), pull chin forward to avoid the tongue dropping to the back of the throat.

If breathing does not occur after opening the airway as described above, then roll patient onto back, keep chin pulled forward and head back. Remove any vomit or crop protection product residue from the patient's mouth by inserting a finger covered with a clean cloth and wiping out any residue. **THIS IS PARTICULARLY IMPORTANT IF ORGANOPHOSPHORUS OR CARBAMATE INSECTICIDES HAVE BEEN SWALLOWED.** Pinch patient's nose and blow into his mouth following your normal breathing rate, or alternatively cover his mouth and blow into his nose. Make sure his chest is moving. Continue until normal breathing takes place.



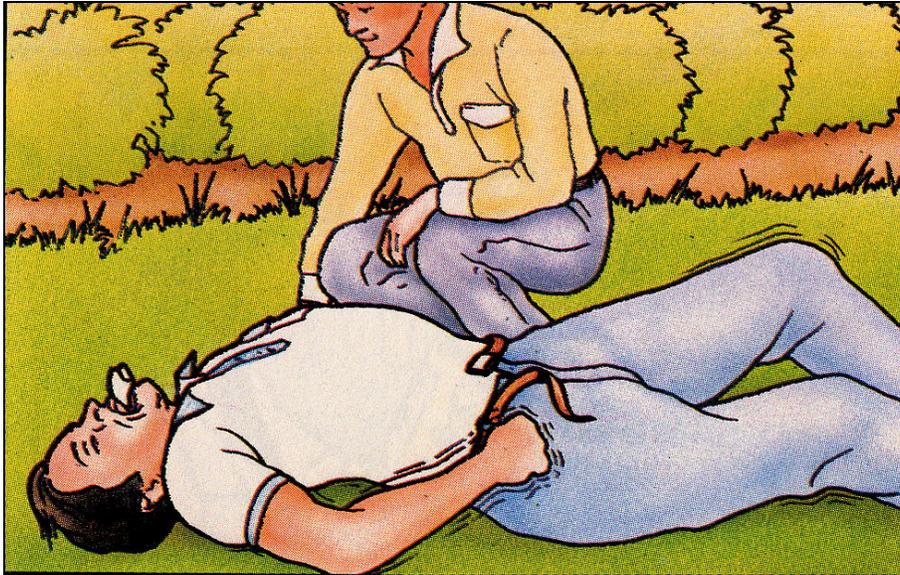
During artificial respiration, tilt patient's head back to open air passage

6. Convulsions

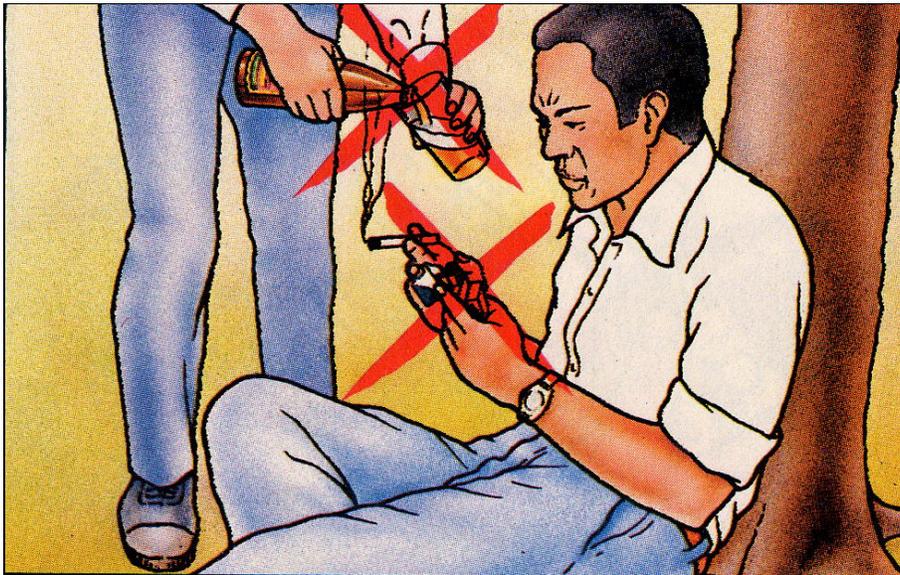
If fits occur, place padded material between teeth to prevent patient from injuring himself. Do not forcibly restrain.

7. Caution

Do not allow any smoking or drinking of alcohol. Do not give milk, as it may accelerate the uptake of some crop protection product from the gut. The patient may drink other fluids.



Protect a patient during a seizure by inserting mouth padding; do not restrain him



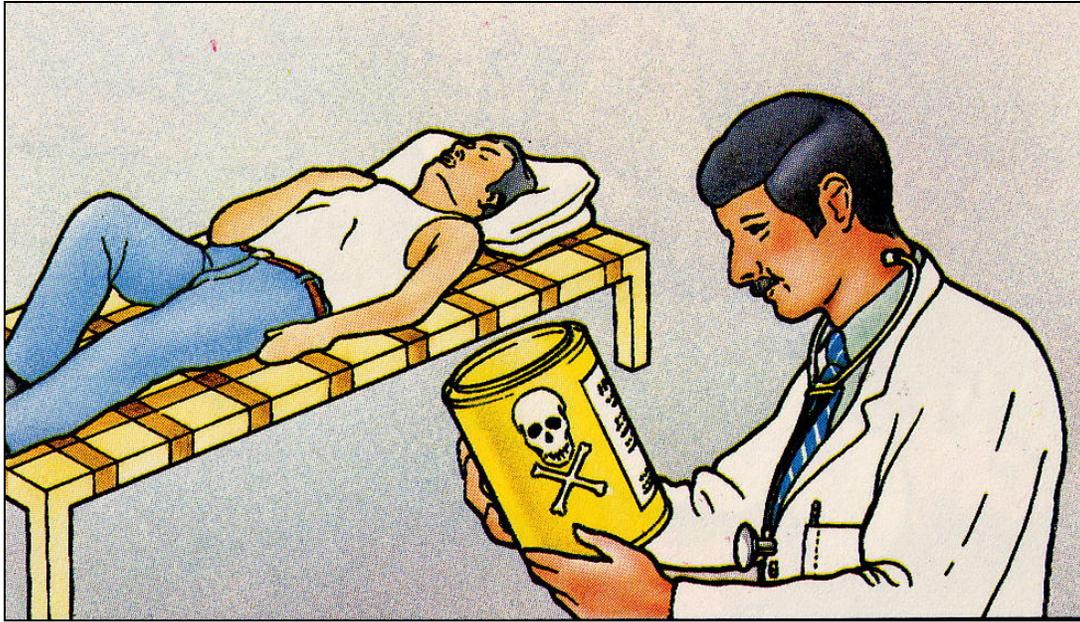
Do not allow the patient to smoke or drink alcohol

Medical assistance

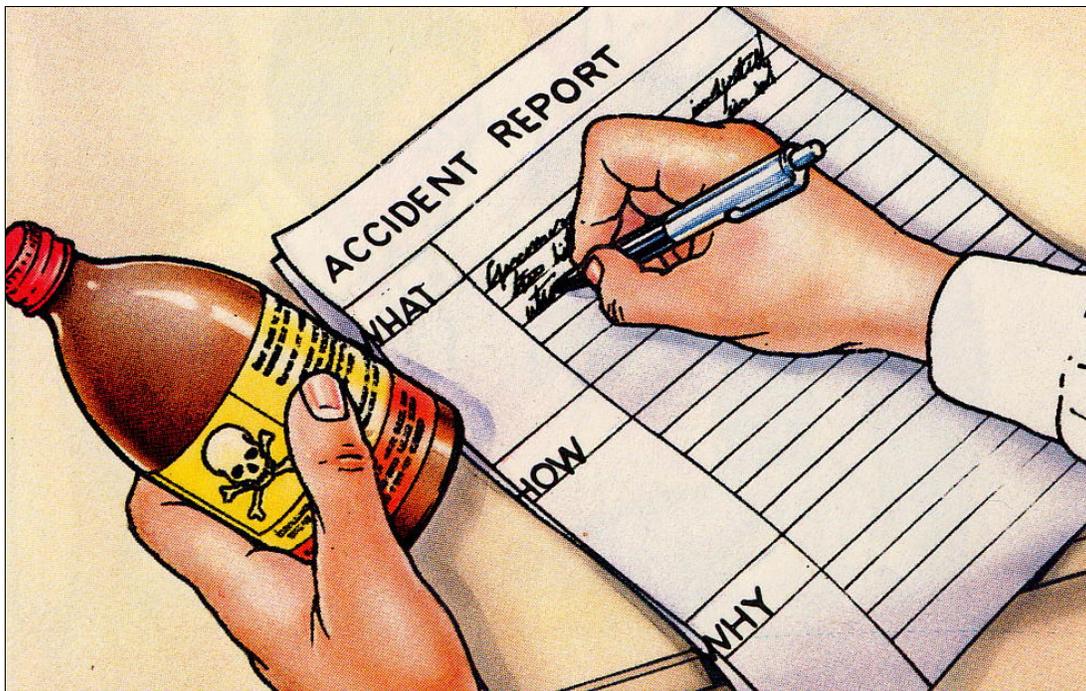
If poisoning is suspected, especially if ill effects persist, obtain medical assistance or take the patient to the nearest medical facility.

Keep all information about the case and the first aid management and pass it on to the medical team together with the labels and containers.

If full recovery from poisoning takes place after simple first aid measures, seek assessment by competent medical staff before the patient recommences work.



Place victims of poisoning under medical surveillance and inform a doctor



Study poisoning incidents to prevent recurrence

Evaluation

If poisoning has occurred, identify the causes of the incident and take action to prevent its recurrence.

4. Guidelines for physicians and nurses

Introduction

The following guidelines are intended for nurses and physicians who may be called upon to deal with cases of crop protection product poisoning.

It is likely that the first aid measures recommended in Section Three will have been carried out at the site of the incident, but the extent of these measures should be assessed first.

Identification

From the report given by the patient, his workmates or a first aid attendant, and from the general condition of the patient, confirm the diagnosis and type of poisoning.

When the crop protection product has been identified, its composition and recommended medical treatment may be found on the label. Use this information when considering further treatment.

Scheme of treatment

DECONTAMINATION

- **Skin and eyes**

Skin and eye washing may have been carried out as a first aid procedure, but it may be useful to repeat this. Wash skin with soap and water and eyes with clean water, or saline solution where available. Take care to avoid contaminating the opposite eye. It may be easier to immerse the eyes under water in a bowl and instruct the patient to blink frequently while immersed.

- **Ingestion**

A decision as to whether further emptying of the stomach is required depends on:

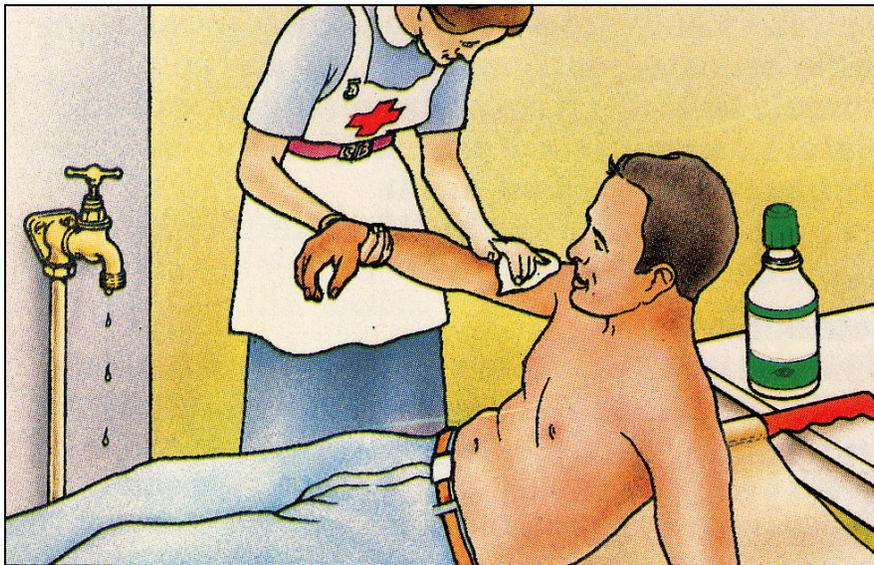
- i. The toxicity and amount of the material swallowed.
- ii. The time that ingestion occurred (stomach emptying will be of no value if 24 hours have elapsed since ingestion).
- iii. The effectiveness of first aid induction of vomiting.

If it is decided to empty the stomach, then use syrup of ipecacuanha or gastric lavage as appropriate.

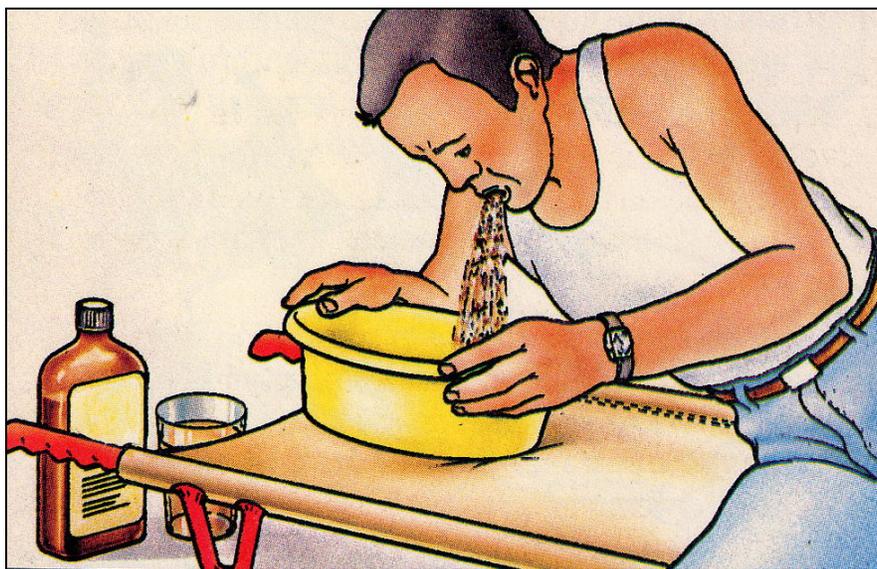
Syrup of ipecacuanha is available in some countries. It is an effective emetic in a dose of 15 ml, followed by 300 ml of water which, if ineffective, may be repeated once after 30 minutes. It must not, however, be used if the patient is unconscious or has ingested a product which contains a high percentage of petroleum-like solvent (e.g. toluene, xylene, isophorone, naphtha, diesel, etc.,).

In these cases gastric lavage, with proper respiratory control, is recommended; an acceptable technique is described in Appendix I.

Once decontamination has been completed effectively, proceed with general medical care.



Make sure the eyes and body surface are thoroughly clean



Empty the stomach of a patient who has ingested highly toxic material

Priorities

Respiration and Circulation

As with all medical emergencies, the greatest priority in cases of poisoning is the maintenance of adequate respiratory and cardiac functions. These should be continuously assessed and any failure promptly treated. Oxygen administration will be helpful in many cases of poisoning where respiratory function is embarrassed, and in methaemoglobinaemia which is induced by some aniline derivatives.



Treat emergencies according to priorities vital functions first, eyes second

Metabolism

Some crop protection products increase body metabolism and heat production. Keep the patient strictly at rest to avoid further stimulation of body metabolism. Promptly correct excessive sweating or raised body temperature by cooling the patient.

Eyes

Some crop protection products are irritating to the eye. Immediately assess the eye for damage and treat accordingly

Therapy

Supportive

Place patient completely at rest in quiet surroundings. Position him with a slight head-down tilt, keep the airway clear and prevent shock.

Specific

Where the poisoning agent is known and where an antidote is recommended on the label, this should be administered as indicated. A summary of recommended treatments for various types of crop protection product poisonings, is given in Appendix II.

Non-Specific

Where no antidote is recommended or none is available, use some general measures to prevent absorption of the poison.

To eliminate crop protection products remaining in the intestinal tract, give activated charcoal orally as an absorbent in a dose of 30 grammes in 100 ml of water. Help elimination of toxic substances from the bowel by using a cathartic such as sodium or magnesium sulphate at a dose of 20 grammes in 300 ml of water by mouth.

Ensure adequate fluid intake to prevent dehydration.

In addition to specific treatment, symptomatic therapy is indicated for control of restlessness and anxiety. Diazepam is the recommended drug in this case.

Follow-up

All cases of poisoning requiring medical care should be observed or followed up for at least 24 hours after all therapy has ceased, as some crop protection products are released slowly from the body fat and relapses may occur.

After poisoning, patients should not work with crop protection products until properly assessed by competent medical staff.

Appendix I

Recommended method for gastric lavage

If the patient has a poor cough reflex, protect the lungs and the patency of the airway by inserting a cuffed endotracheal tube before passing a stomach tube. In conscious, and even unconscious patients with intact cough and gag reflexes, a large bore stomach tube may be passed at once. Place the patient so that his mouth is lower than his trachea. Remove any dentures and keep the mouth open with a gag. Lubricate the tube with glycerine or a suitable jelly, and ease it over the tongue and down the oesophagus to a distance of about 50 cm in adults.

Suck out the stomach contents, using gentle mechanical suction if available. If a source of continuous suction is not available, a large syringe fitted with an adaptor will help. If little or nothing is obtained, it may be that the tube is not correctly located. Proper positioning of the tube can be checked by forcing a little air down it and listening with a stethoscope over the stomach for bubbling sounds.

After making a reasonable effort to remove any stomach contents and being quite certain that the end of the tube is in the stomach, attach a large evacuator or funnel to the oral end of the tube. Add water or physiological saline heated to about body temperature (300 ml for adults and less for children). If a funnel is used, elevate the oral end of the tube and allow the water to enter the stomach by gravity. For this purpose, it may be necessary to use an adaptor and add a length of tubing between the funnel and the stomach tube so as to increase the overall length and make it easier to regulate the height of the column of water. Before all the water has passed into the stomach, lower the tube into a basin or jar and allow the stomach contents to siphon off. Do not use more than 300 ml for each washing, because a larger volume would tend to cause emptying of the stomach contents into the duodenum. Repeat the lavage until the fluid is clear.

A tube used for evacuating the stomach must have a rounded, solid end to facilitate passage through the oesophagus. It must have at least one large opening in the side just behind the tip and preferably several large holes placed at intervals back from the tip. The outer wall must be very smooth. Stomach evacuator tubes commonly sold for use in children have an outside diameter of 7.33 mm (No 22 Charrière scale). Those for adults, commonly measure 10 mm (No 30 Charrière scale).

Appendix II

Recommended treatment regimes

ORGANOPHOSPHORUS COMPOUNDS (e.g. parathion, malathion, dichlorvos)

Uses: insecticides

Signs and symptoms of poisoning

Exhaustion, weakness, confusion, vomiting, cramp-like abdominal pains, cold sweating, salivation, tightness of the chest, muscle twitches in the eye lid and tongue, followed by larger muscle twitching, muscle weakness, diarrhoea, bronchial hypersecretion, bronchial constriction, bradycardia, narrowed pupils, etc.,

In very severe cases: convulsions, cyanosis, profuse sweating, incontinence, mental confusion, progressive cardiac and respiratory failure, coma, etc.,

Specific treatment

The organophosphorus compounds are cholinesterase inhibitors and treatment is required urgently. Keep the patient strictly at rest!

1. Maintain adequate respiratory and cardiac function. Give oxygen if necessary.
 2. Give atropine sulphate intravenously in a dose of 2-4 mg (two to four milligrammes) for an adult immediately and repeat at 5-10 minute intervals until signs of atropinisation occur (e.g. dry mouth, tachycardia and usually dilated pupils). Maintain atropinisation for at least 24-48 hours and carefully observe the patient as the drug is withdrawn—it may be necessary to recommence treatment if signs of poisoning return.
 3. If cases of organophosphorus poisoning become apparent within 12 hours, then give 1 gramme of an oxime preparation (e.g. pralidoxime-chlorides) slowly intravenously. This drug must NOT be used as an alternative or in preference to atropine, the use of which is ESSENTIAL.
 4. Close observation of the patient's progress should be made. Treatment with drugs may be required for up to 10 days in severe cases.
 5. Associated anxiety may be relieved by giving 5-10 mg of diazepam intramuscularly.
-

CARBAMATES

Cholinesterase inhibiting group
(e.g. aldicarb, carbaryl, propoxur)

Uses: insecticides

Signs and symptoms of poisoning

Identical to those occurring in organophosphorus poisoning; however, features tend to be of quicker onset and shorter duration.

Treatment

Atropine therapy as indicated for organophosphorus compounds if required. (N.B. oximes are contraindicated in carbamate poisoning).

DITHIOCARBAMATES

Non-cholinesterase inhibiting group
(e.g. maneb, mancozeb)

Uses: fungicides

Signs and symptoms of poisoning

This group of compounds is generally of low toxicity but exposure to them followed by alcohol ingestion may produce headaches, palpitations, nausea, vomiting and flushed face.

Treatment

No specific treatment is available and only symptomatic therapy is recommended.

ORGANOCHLORINE COMPOUNDS (e.g. DDT, dieldrin, lindane)

Uses: insecticides

Signs and symptoms of poisoning

Lack of coordination, tremor, convulsions. (N.B. poisoning with some compounds may initially produce few symptoms and a seizure may be the first sign).

Specific treatment

The action of organochlorine compounds on the central nervous system is of paramount importance in acute poisoning.

1. Give phenobarbitone (100 mg) or diazepam (10 mg) intramuscularly or slowly intravenously, to control convulsions - it may be necessary to continue treatment for up to two weeks after poisoning.
2. Give diazepam (10 mg) intramuscularly or slowly intravenously for persistent convulsions.

PYRETHROID COMPOUNDS

(e.g. cypermethrin, deltamethrin, fenvalerate)

Uses: insecticides

Signs and symptoms of poisoning

Irritation of oro-nasal mucosae, salivation, convulsive seizures. Some pyrethroids may cause local facial sensations, which are not associated with systemic poisoning. The effects are reversible and no specific treatment is necessary.

Specific treatment

1. Administration of activated charcoal.
2. Control seizures with injectable diazepam or barbiturate.

Contraindications

CNS stimulants.

DINITROPHENOLIC COMPOUNDS

(e.g. DNOC (dinitro-cresol), binapacryl, dinoseb)

Uses: fungicides, herbicides and insecticides

Signs and symptoms of poisoning

Tremors, increased respiratory rate, sweating, lethargy and insomnia, nausea, restlessness, thirst, raised body temperature, tachycardia, fatigue (yellow staining of the skin in the presence of white sclera may give a clue to exposure to some dinitrophenols).

Specific treatment

The dinitrophenols affect oxidative phosphorylation and poisoning will thus lead to sudden increase in metabolic rate.

1. Adequate emptying of stomach and the use of activated charcoal is important.
2. Effectively cool the body to maintain as near normal a body temperature as possible.
3. Administer oxygen therapy.
4. Avoid alcohol.
5. Ensure adequate intake of fluid.

BIPYRIDYLS

(e.g. paraquat, diquat)

Uses : herbicides

Signs and symptoms of poisoning

Initially (within hours) irritation of mouth and throat, with nausea, vomiting, abdominal pain and diarrhoea (often bloody).

Later (1-3 days) signs of kidney and liver damage (mild to moderate).

For diquat only a profuse watery diarrhoea also occurs, which can lead to shock.

For paraquat only 5-14 days after poisoning, progressive dyspnoea may occur, resulting in death from respiratory failure.

Severe poisoning from both chemicals can result in shock and death within a few hours of intake.

Treatment:

1. Give gastric lavage and, leaving the gastric tube in situ, give 1 litre of 15% aqueous suspension of Fuller's earth together with a suitable purgative, e.g. mannitol - 200 ml of a 20% solution. Repeat administration of Fuller's earth and purgative until Fuller's earth is seen in the stool. This normally takes between 4 and 6 hours from starting treatment.

Alternative to Fuller's earth bentonite or activated charcoal.

2. Avoid the use of oxygen therapy for the first 48 hours.

3. If severe burning in mouth and throat has occurred, then only give liquids by mouth to patients.

NOTE The following test may be performed to aid diagnosis to 20 ml of urine from the patient, add alkali e.g. sodium hydroxide, until the pH is greater than 9. Then add a spatula full of sodium dithionite. If paraquat is present in the urine it will turn blue; in the presence of diquat it will turn green.

ANTICOAGULANTS

(e.g. warfarin, bromadiolone, difenacoum, chlorophacinone)

Uses: rodenticides

Signs and symptoms of poisoning

Nausea, vomiting, diarrhoea upon ingestion. Bleeding from nose and gums, blood in excretions; internal bleeding leading to shock and coma.

Specific treatment

Anticoagulants act through inhibition of blood clotting. Keep patient strictly at rest.

1. Remove ingested product through vomiting or gastric lavage.

2. To restore blood clotting, give 10 to 20 mg vitamin K1 by oral, intramuscular or intravenous route, depending on severity of case. Do not exceed 40 mg / day.

3. Continue therapy until blood clotting time is normal, which may take several weeks.

4. In severe cases, administer blood transfusion and if available, frozen plasma.

Treatment is necessary even in the absence of symptoms because of increased tendency to bleed.

Addresses

For use in emergencies, record important addresses and telephone numbers here. These should include the following as appropriate to your needs: local doctors, medical centres, hospitals, poison centres, crop protection product manufacturers' emergency numbers, etc.,

Addresses

Bibliography

GCPF (GIFAP) Guidelines for:

- (a) The Safe Formulation and Packing of Crop Protection Products
- (b) The Safe and Effective Use of Crop Protection Products
- (c) The Safe Transport of Crop Protection Products
- (d) Quality Control of Crop Protection Products
- (e) The Avoidance, Limitation and Disposal of Pesticide Waste on the Farm
- (f) The Safe Warehousing of Pesticides
- (g) Writers of Crop Protection Product Labels and Literature
- (h) Personal Protection when using Pesticides in Hot Climates

All the above are available from GCPF.

Notes

Notes

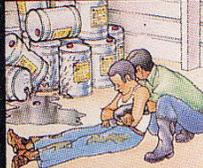
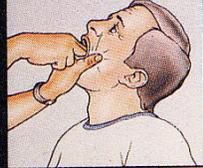
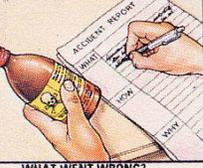
Notes

GUIDELINES POSTER



GUIDELINES

for emergency measures in cases of pesticide poisoning

| | | | |
|---|--|--|---|
|  |  |  |  |
| Always read the label and get advice before using a pesticide | Prevent accidents: avoid all possible contact with pesticides | Be prepared for accidents: keep emergency equipment handy | Stay calm: take time to think, identify the trouble |
|  |  | | |
| Place an unconscious patient on his side, tilt the head back | Treat patients according to priorities: attend to breathing first, eyes second, and other problems third. Remove contaminated clothing quickly and remember to seek medical advice | | |
|  |  |  |  |
| Decontamination prevents poisoning! Remove patient from spillage site | Wear boots and gloves while undressing a patient and then wash pesticide away | Keep patient comfortable, apply water to control overheating | For artificial respiration tilt head back to open patient's air passages |
|  |  |  |  |
| If necessary induce vomiting by tickling the throat in the upright patient | Do not allow the patient to smoke or drink alcohol | Seek medical assistance as soon as possible | WHAT WENT WRONG? Study a case of poisoning to prevent recurrence |

GROUPEMENT INTERNATIONAL DES ASSOCIATIONS NATIONALES DE FABRICANTS DE PRODUITS AGROCHIMIQUES
 INTERNATIONAL GROUP OF NATIONAL ASSOCIATIONS OF MANUFACTURERS OF AGROCHEMICAL PRODUCTS
 GIFAP - AVENUE HAMOIR 12, 1180 BRUSSELS, BELGIUM

Copies of these Guidelines and of the poster may be obtained from GIFAP and its member associations

GIFAP
 Avenue Albert Lancaster 79A
 1180 Brussels Belgium
 Telex: 68.120 Tel (2) 375 68 60

SUMMARY OF ACTION IN CASES OF CROP PROTECTION PRODUCT POISONING

- Remove patient from contact;
- Act calmly, keep patient comfortable and strictly at rest
- Remove contaminated clothing, wash exposed skin and eyes thoroughly;
- Pay attention to breathing, give artificial respiration if required;
- Lay patient on his side;
- If material is highly toxic and has been swallowed - induce vomiting (only in conscious patients);
- Seek medical advice.

Published by GIFAP 1997

No part of this booklet maybe reproduced by any manner whatsoever without written permission.

Dépot Légal: D/1997/2537/2

Design: Creastyl (Stephane Sabbe +32 81 40 18 28)

Illustrations: Norman Lacey

Printed in Belgium by Creastyl

Global Crop Protection Federation (GCPF)

Avenue Louise 143
B-1050 Brussels - Belgium

Telephone : +32 2 542 04 10
Facsimile : +32 2 542 04 19
E-mail : gcpf@pophost.eunet.be
Web site : <http://www.gcpf.org/>