INTERVENTIONAL SHIELDS for HORIZONTAL PROTECTION

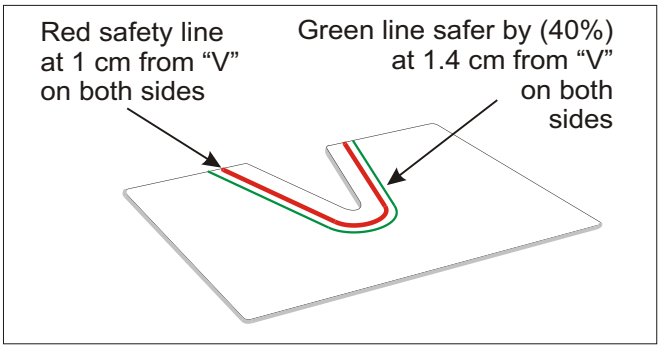
INSTRUCTIONS

DESCRIPTION

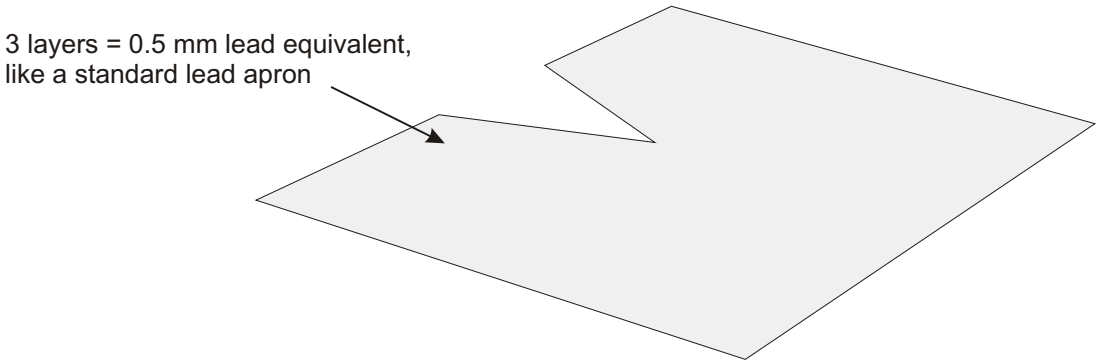
This device is composed of:

1. A lead shield of 9 x 10 cm and 1.6 mm in thickness stopping practically all primary radiation **on its surface**. It is covered with a white plastic. Its small size imposes a field of less than 7 x 8 cm, which limits the volume irradiated and consequently the scattered radiation to both patient and operator.

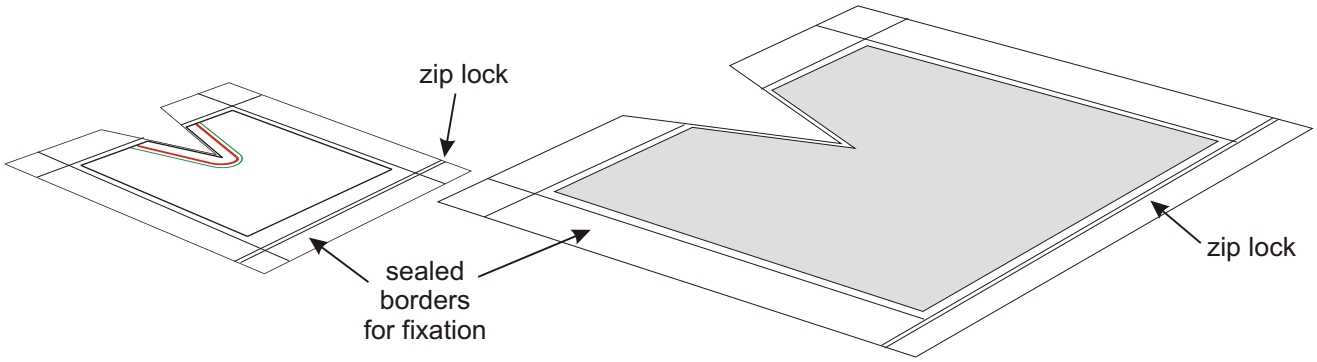
A *"V" window* shows part of the area of interest and the tip of instruments. **Some critical scattered radiation overflows beyond the window above the lead, but drops abruptly.** Therefore, the fingers must remain at least one cm away (red line). At the green line, 1.4 cm from the "V", protection is safer by 40% more.



2. A flexible shield, of 40 x 40 cm, equivalent to 0.5 mm of lead limits scattered radiation to a reasonable level.



3. Disposable and sterile Polyethylene bags. They have a "V" notch like that of the shields and a zip closure. Self-adhesive strips **help prevent slipping. S**ealed borders also serve as anchorage with forceps.



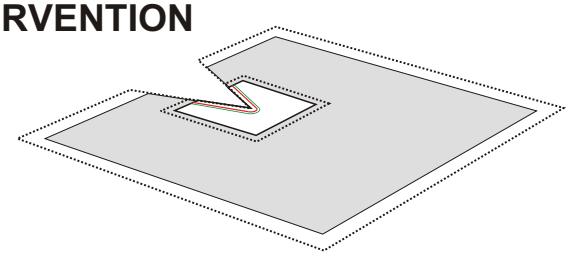
STERILIZATION

Do not sterilize the shields, but place them into sterile and disposable bags. A gloved person holds the bag while an external assistant slips the shields inside. Close the bags. Peel off adhesives for fixation. If necessary, use forceps to steady the sealed borders of the bags, but take care not to puncture the contaminated central compartment. **Sterile bags remain sterile for at least two years.** Always keep some at hand.

Being protected by the bags, the shields will remain clean. Wash them with soap and water if necessary and disinfect them with alcohol or Zephiran. Do not use strong solvents such as acetone. Protect the red and green lines; trace them again if they fade.

FLUOROSCOPY is at the same level as the INTERVENTION

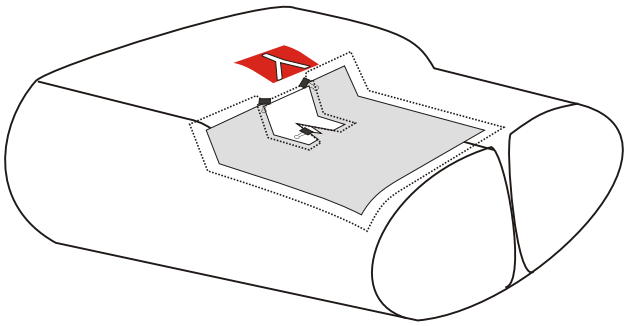
Examples: insertion of a tube in the stomach, etc.
Superimpose the "V" window of both shields. **Check that the radiation beam remains inside the lead shield at all time. Keep fingers beyond the red line (or beyond the green line if possible).**



FLUOROSCOPY is at a HIGHER LEVEL than the PUNCTURE SITE

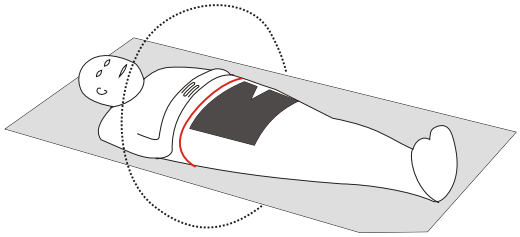
Example: the fluoroscopy of an obese abdomen is higher than the groin where the manipulations of a catheter take place. In this case, nearby scattered radiation would reach the fingers directly.

We therefore suggest to fold the lead shield in the middle (as shown on the right); then fix both envelopes and shields together. The vertical portions thus form a protective barrier and the small diamond-shaped opening reduces radiation to a minimum.

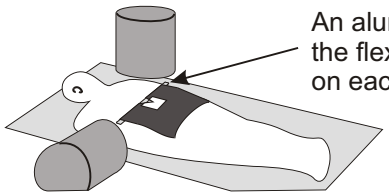


WORK IN PROGRESS

FLUOROSCOPY with a SCANNER



HORIZONTAL and VERTICAL BEAMS during VERTEBROPLASTY



PRECAUTIONS

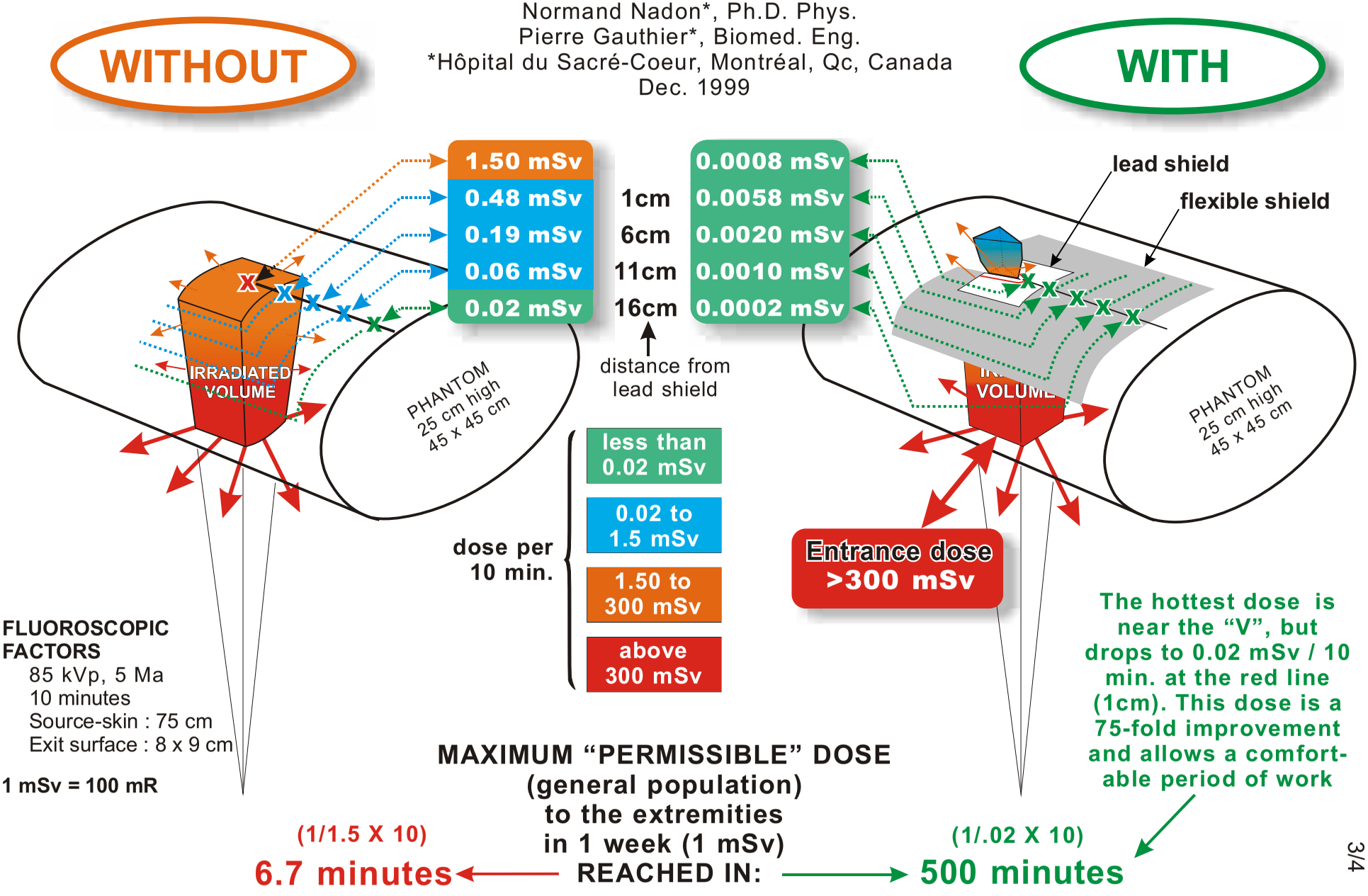
The shields may fissure with time. Verify their integrity regularly by examining them under fluoroscopy. Bags are somewhat fragile, may perforate without obvious hole and thus must be used only once. Replace any suspicious part.

WARNING

Must be used only by qualified personnel, according to appropriate procedures, and under the responsibility of a physician. OCTO*STOP*® Inc. and its personnel do not assume any liability regarding the use, indications, consequences, or any situation directly or indirectly related to its products.

EXPOSURE / PROTECTION
HORIZONTAL OCTOSTOP® SHIELDS
(fluoroscopy: 10 minutes)

Jean A. Vézina M.D., Radiologist
Normand Nadon*, Ph.D. Phys.
Pierre Gauthier*, Biomed. Eng.
*Hôpital du Sacré-Coeur, Montréal, Qc, Canada
Dec. 1999



SUGGESTIONS

✔ ***Never put your fingers in the direct beam unless they are protected by the lead shield. Keep them at least 1 cm away from the "V" window (red line) or better at the green line, where protection is increased by 40%.***

✔ ***The flexible shields do not protect from the direct radiation, but only from the scattered radiation to the wrist, forearm and often to the upper body, thyroid and eyes. You and your assistant should stand in a protected angle.***

✔ ***The use of the shields is important when working at less than 18 cm distance from the primary beam (especially if near the entrance of the beam).***

✔ ***Try the method "FLMB" for "Flash-Look/Move-Blind" repeatedly, keeping fingers away during fluoroscopy.***

✔ ***Holding a needle with long forceps protects the fingers by keeping them at a distance.***

✔ ***For long and repeated examinations, turn the patient slightly or angle the beam, to spread the entrance dose, which may exceed 300 mSv in 10 minutes.***

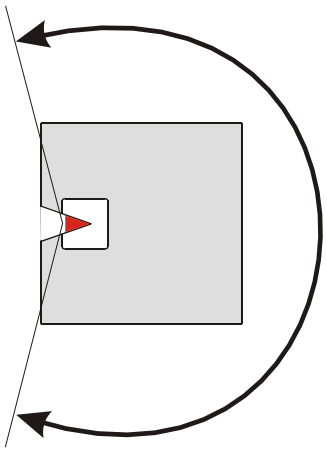
✔ ***Do not sterilize the shields, but place them into sterile and disposable bags.***

✔ ***Register the fluoroscopic time.***

✔ ***Wear a radiation monitor (ring on the index finger) inside your glove. Or figure out the dose you receive with this system (0.02 mSv or 0.04 mSv per 10 minutes).***

✔ ***Fluoroscope your shields for fissures; replace them if necessary.***

✔ ***Have a specialist inspect your installations periodically.***



approximate zone of protection of personnel above and around the shields