TÜRKİYE ULUSAL AJANSI
TURKISH NATIONAL AGENCY

Erasmus+

MariHEALTH

Maritime Health Trainings for Seafarers and Doctors

«Injection and intravenous fluid infusion»

ERASMUS+ KA2 - Cooperation for Innovation and the Exchange of Good Practices
KA202 - Strategic Partnerships for vocational education and training

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İSTANBUL TEKNİK ÜNİVERSİTESİ 1773

University of Strathclyde Glasgow

MARITIME UNIVERSITY CONSTANTA

REPUBLIC OF TURKEY
MINISTRY OF HEALTH
GENERAL DIRECTORATE OF HEALTH
FOR BORDER AND COASTAL AREAS OF TURKEY

UCTEA CHAMBER OF MARINE ENGINEERS 1960

ORKA INFORMATICS

AP&A GROUP

Injection and intravenous fluid infusion

✓ ***Learning Objective;***

The aim of this section is to provide the knowledge necessary to give immediate response about **Injection and intravenous fluid infusion** onboard. Upon completion of this section, trainers will be able to:

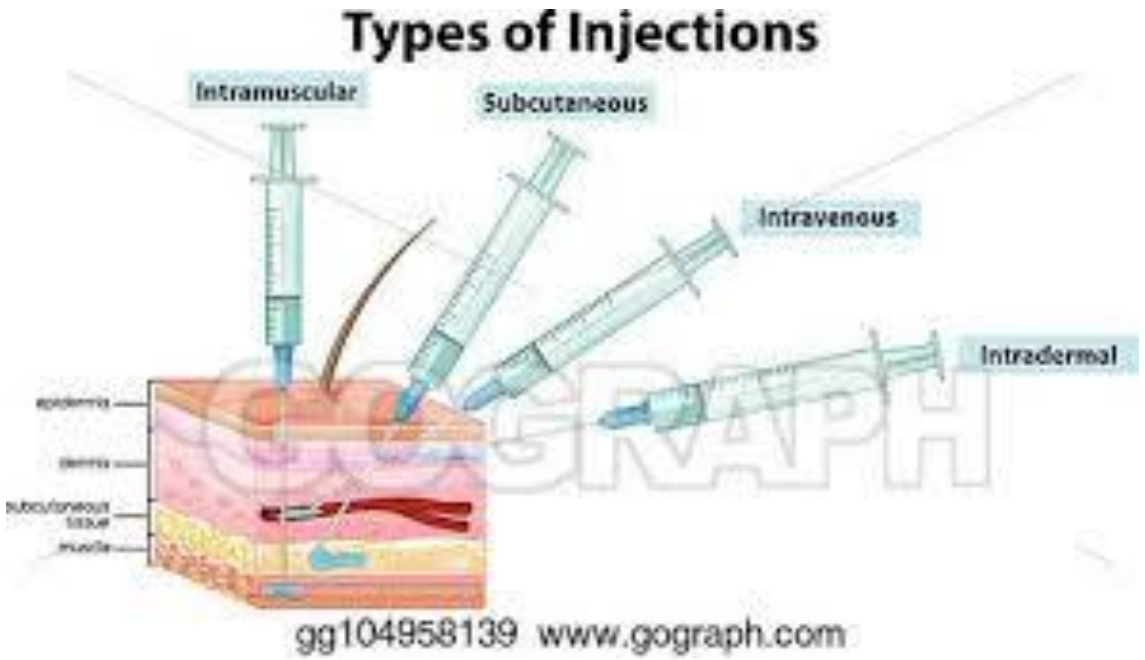
- Explain what it is injection
- Summarize the types of Injections
- Explain the Purposes of Injection and fluid infusion

What is injection?

Injecting is the act of giving medication by use of syringe and needle to obtain the desired therapeutic effect taking into account the patients safety and comfort.

Types of Injections

– bodytissues Subcutaneous (SC)
– into tissue below dermis ofskin Intramuscular (IM)
– into the bodymuscle Intravenous (IV)
– into avein Intradermal (ID)
– into thedermis just underthe epidermis

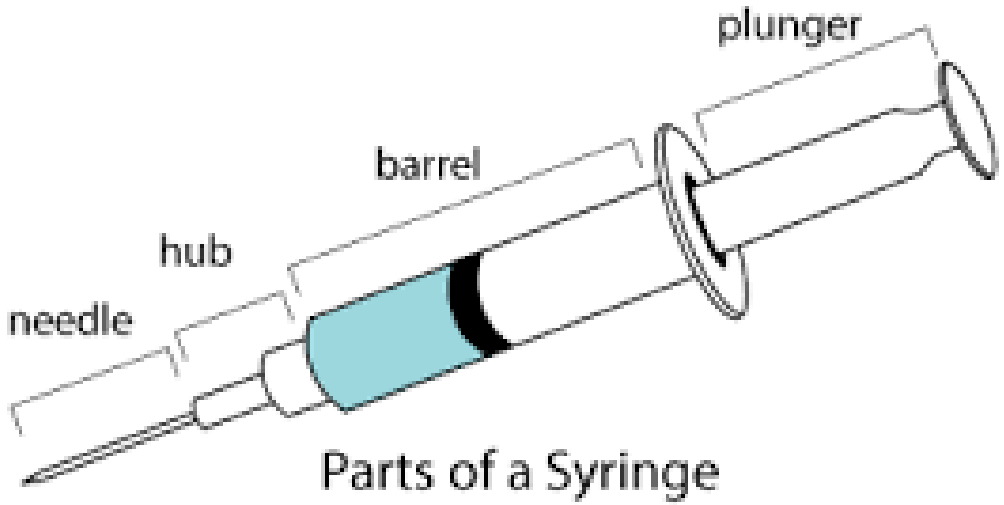


Purposes of Injection

To get rapid and systematic effect of the drug.
To provide the needed effect even when the client is unconscious.
To restore blood volume by replacing the fluids.
To give nourishment when it can't be taken by mouth.

Part of Syringes

– Plunger
– Barrel
– Hub
- Needle



Parts of a Syringe

Which needle is correct ?

The colour at the top of the needle reflects its size the higher the number the smaller the lumen(bore).

Colour Code	Guage	Ext. dia. (mm)	Length. (mm)	Flow rate ML./min
Orange	G-14	2.1	45	300
Grey	G-16	1.7	45	172
Green	G-18	1.3	45	76
Pink	G-20	1.0	33	54
Blue	G-22	0.8	25	31
Lime	G-24	0.7	19	14

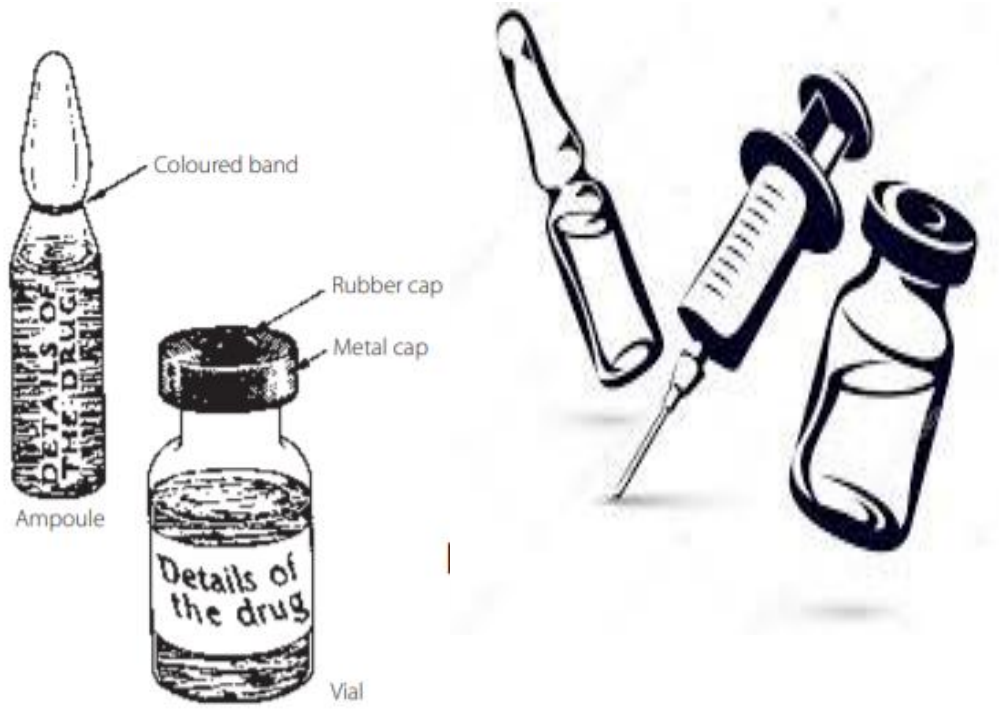
Cannula size color code

Vials and ampoules of medicines for injection

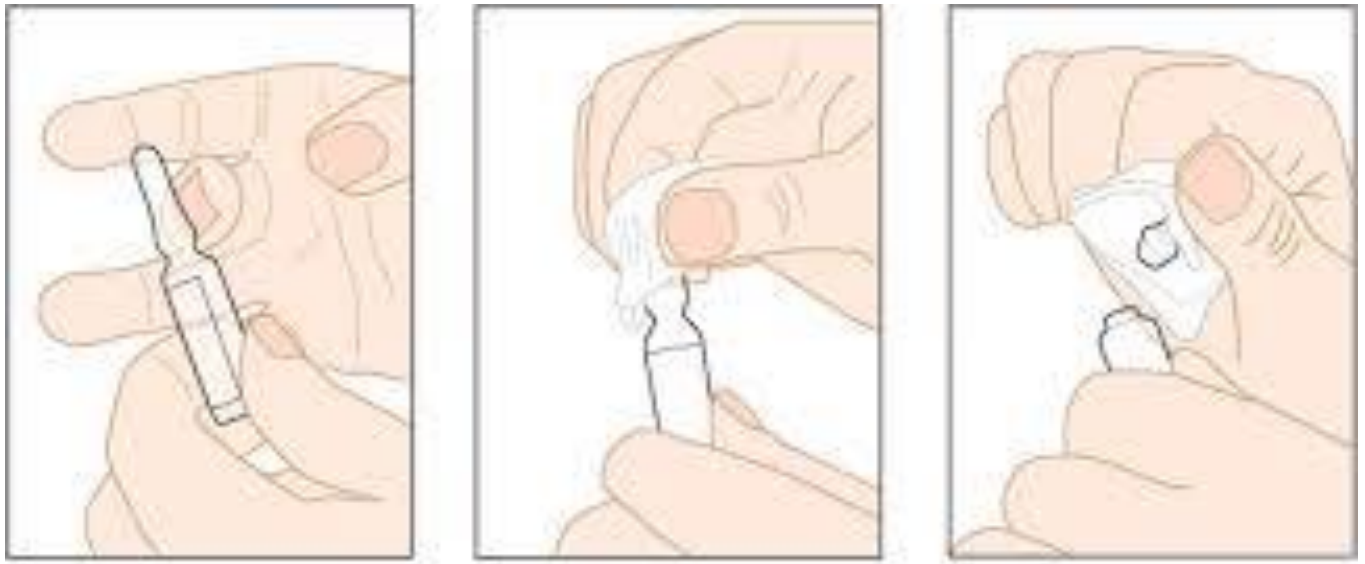
AMPULES AND VIALS ARE FREQUENTLY USED TO PACKAGE STERILE PARENTERAL MEDICATIONS.

- AN AMPULE IS A GLASS CONTAINER USUALLY DESIGNED TO HOLD A SINGLE DOSE OF A DRUG.

- A VIAL IS A SMALL GLASS BOTTLE WITH A SEALED RUBBER CAP.



How to prepare the ampoule for injection?



****We can demonstrate the preparation of the ampoule with video **SAMPLE VİDEO**
https://www.youtube.com/watch?v=Vs8nuO8N4Fs

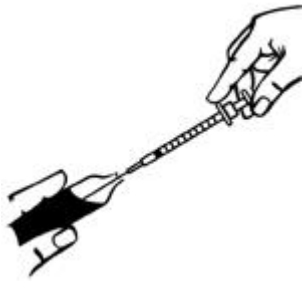
How to prepare the vial for injection?

Prepare your medicine vial:
•If this is your first time using this medicine, take the cap off the vial.
•Wipe the rubber top clean with an alcohol pad.

**We can demonstrate the preparation of the ampoule with video

Directions For Use: Drawing Medication From An Ampoule

•Wash your hands thoroughly with soap and water.
•When indicated on the label, carefully shake or rotate the ampoule.
•Check to see if there is any liquid in the top part of the ampoule. If there is, gently flick the ampoule with your finger to make it descend.

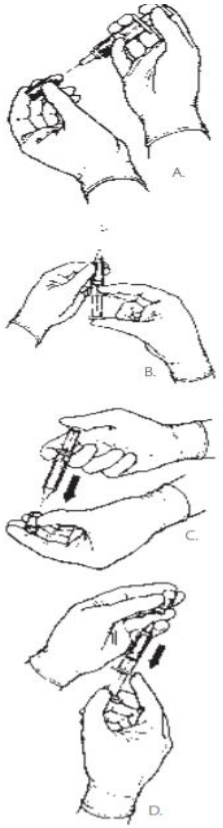


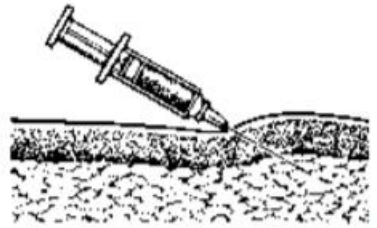
**We can demonstrate the preparation of the ampoule with video

How to give a subcutaneous injection

•Assemble the following items:

- ✓ a disposable syringe
- ✓ a 19- or 21-gauge needle for drawing the medicine into the syringe
- ✓ a disposable 23- or 25-gauge needle for injecting the medicine
- ✓ alcohol swabs
- ✓ the medicine.





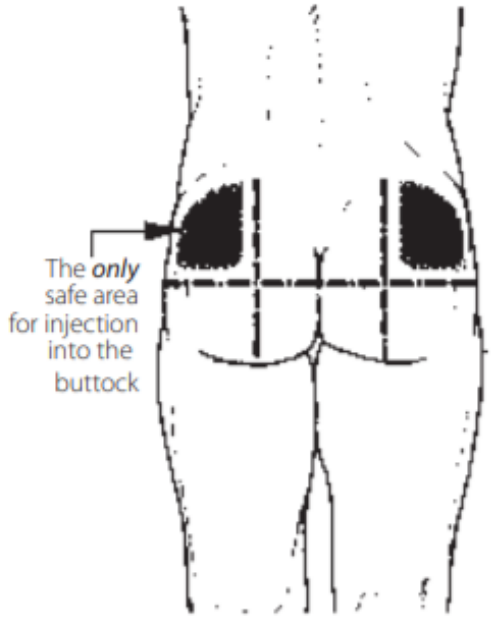
The correct depth of the needle for a subcutaneous injection.

****We can demonstrate the preparation of the ampoule with video**

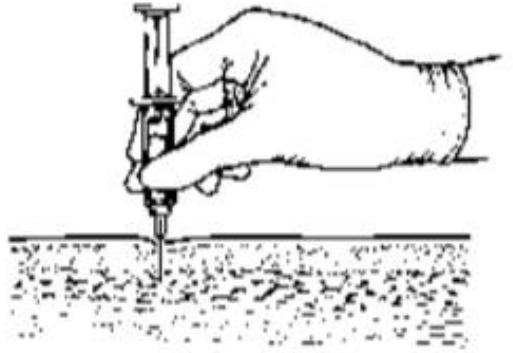
How to give an intramuscular injection

Assemble the following items:

- a disposable syringe
- a disposable 19- or 21-gauge needle
- alcohol swabs
- the medicine



Sites for intramuscular injection.



How to give an intramuscular injection.

****We can demonstrate the preparation of the ampoule with video**

How to perform an intravenous fluid infusion

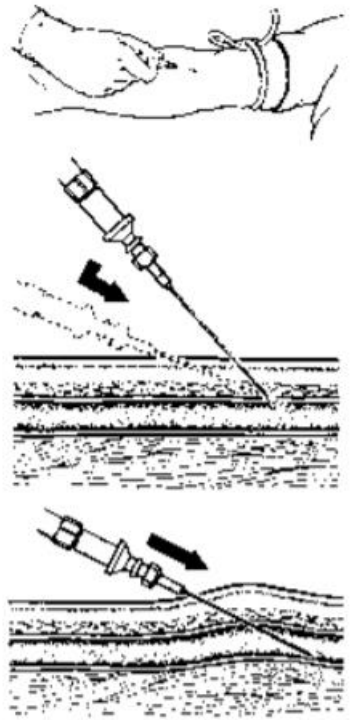
■ Assemble the following items:
- latex gloves
- a sterile, disposable intravenous administration set
- a 19- or 21-gauge intravenous cannula
- a tourniquet
- adhesive tape (1 cm in width)
- dextrose (glucose), 5% solution, or sodium chloride, 0.9% solution, in a sterile glass bottle or plastic container
- alcohol swabs
- several paper towels

**We can demonstrate the preparation of the ampoule with video

How to give an intravenous fluid infusion

Choose a site for the infusion:

- the back of the forearms and the back of the hands are the best sites;
- the large vein usually visible just above the thumb side of the wrist is ideal;
- a site where a vein divides is ideal because the vein is less mobile at this point and therefore easier to pierce;
- avoid the front of the forearms and elbows, if possible;
- never place the cannula across a joint



**We can demonstrate the slide

How to secure an intravenous catheter

Choose a site for the infusion:

- the back of the forearms and the back of the hands are the best sites;
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- a site where a vein divides is ideal because the vein is less mobile at this point and therefore easier to pierce;
- avoid the front of the forearms and elbows, if possible;
- never place the cannula across a joint

****We can demonstrate the slide**

How to give an intravenous injection

Assemble the following items:

- latex gloves
- alcohol swabs
- cotton swabs or cotton-wool balls
- a disposable syringe
- a disposable needle to draw up the medicine
- a disposable 19- or 21-gauge needle for the injection
- the medicine.

■ Note that some medicines have to be injected slowly, often over several minutes: check this point carefully before you begin the injection.

****We can demonstrate the slide **SAMPLE VİDEO LİNK :** https://www.youtube.com/watch?v=y2DFosUAe4o

References

[1] Schlaich, C., Reinke, A., Savenich, C., Reimer, T., Oldenburg, M., Baur, X., ... & Ioannidis, N. (2009). Guidance to the International Medical Guide for Ships 3 rd edition. *International maritime health*, *74*, 328-328.

[2] World Health Organization. (2007). *International medical guide for ships: including the ship's medicine chest*. World Health Organization.