Skill Developing Tutorial (SDT)-2

Certificate Course on Diabetology

Distance Learning Program

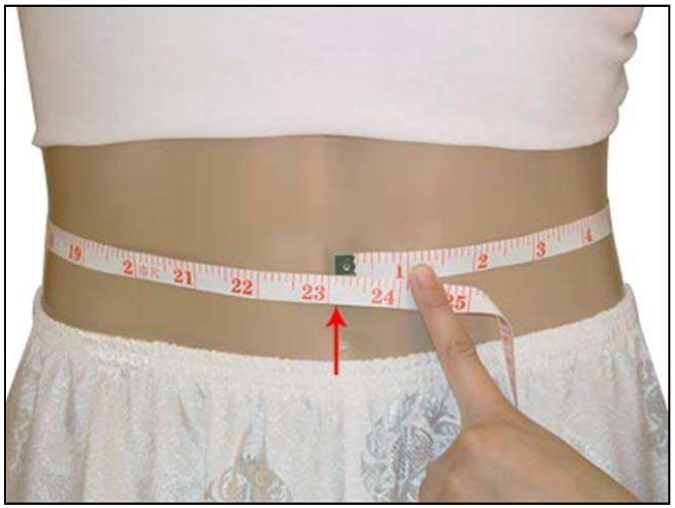
Objectives

- 'SDT-2' is designed for developing/improving practical skill in some clinical exams, namely anthropometric measurements and foot exam for neuropathy and vasculopathy.
- SDT-2 will also help to improve practical knowledge in insulin injection and glucometer use.
- All these have tremendous impact in proper management of diabetes as well as assessment and prevention of complications of diabetes.

All videos and graphics are provided by: Center for Global Health Research - CGHR, BADAS

Anthropometric measurements

1. Introduce yourself and take permission from the patient. Explain the patient about examination.
2. Remove excess/extra/heavy clothing, shoes, any object from pockets, etc.
3. Measure waist circumference mid-way between the lowest point of rib cage and upper border of the iliac crest, after the end of normal expiration, the measuring tape being parallel to the floor. This should be the minimum circumference at waist.
4. Measure hip circumference at the level of greater trochanters, the measuring tape being parallel to the floor. This should be the maximum circumference at hip.
5. Measure the height/weight properly.

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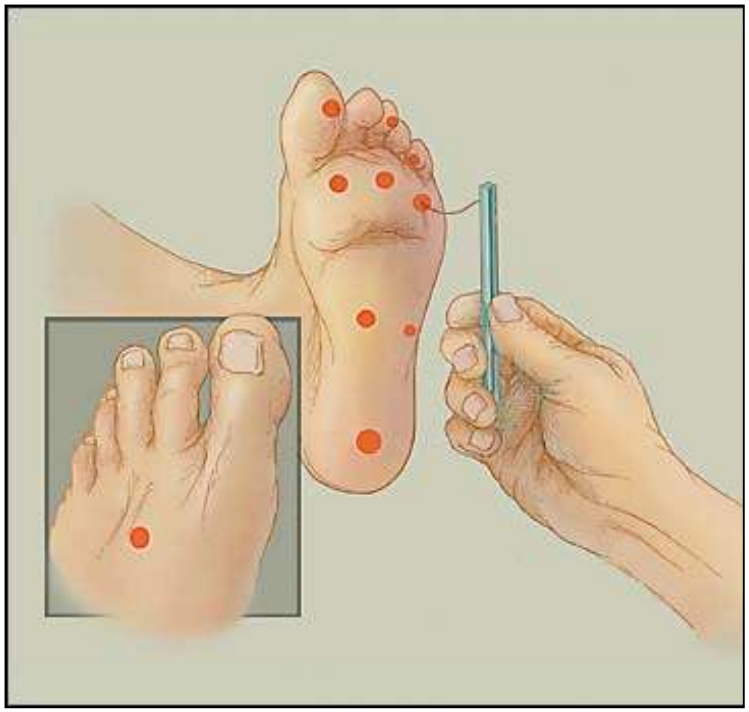
Anthropometric measurements

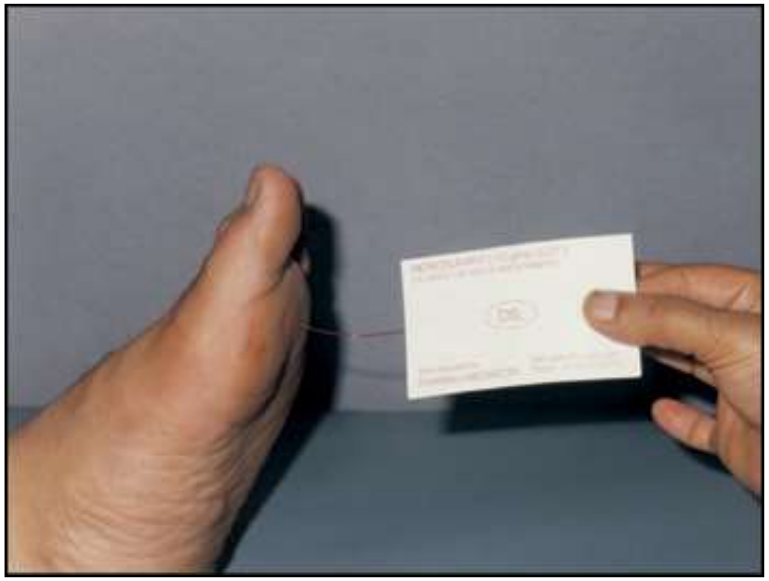
- Play animation (001)*
- Play video (002)*

* Open video through the link provided

Examination of foot by monofilament

1. Stand on the right side of the patient.
2. Introduce yourself and take permission from the patient. Explain the patient about examination.
3. Bend the monofilament to its maximum on the dorsum of patient's hand to give him/her an idea about it.
4. Properly expose the examining area.
5. Ask the patient to close his/her eyes. Bend the monofilament to its maximum at the following sites (figure below) of patient's foot and ask the patient whether he/she can feel it. Examine both feet.
6. Note the site of impaired sensation (eg. right/left; toe/heel) of touch by the monofilament.
7. Inability to feel the monofilament at >3 sites, designate a patient to have sensory impairment (LOPS - loss of protective sensation)
8. Give thanks to the patient and finish your examination.





Monofilament test

- Play video (003)*

* Open video through the link provided

Test of vibration sensation (of lower limb) by tuning fork

1. Stand on the right side of the patient. Use a 128 Hz tuning fork.
2. Introduce yourself and take permission from the patient. Explain the patient about the examination.
3. Show the tuning fork to the patient, vibrate it, touch it to the patient's sternum, and ask him/her if he/she can feel the vibration.
4. If he/she can feel, then move the tuning fork and explain him/her that you are going to do the same over other parts.
5. Properly expose the examining area.
6. Vibrate the tuning fork, touch it over the great toe, and ask whether he/she can feel it.
7. If the vibration perception is absent, then proceed proximally – medial/lateral malleolus, tibial tuberosity and anterior portion of iliac crest. Examine both limbs.
8. Give thanks to the patient and finish your examination.

Tuning fork test

- Play video (004)*

* Open video through the link provided

Examination of peripheral pulses (of foot)

1. Stand on the right side of the patient.
2. Introduce yourself and take permission from patient. Explain the patient about the examination.
3. Properly expose the examining area.
4. To palpate dorsalis paedis artery, place your middle three fingers at the proximal extent of the groove between the first and second metatarsals.
5. For posterior tibial artery, feel at 2 cm below and 2 cm behind the medial malleolus.
6. Examine both feet.
7. Give thanks to the patient and finish your examination.

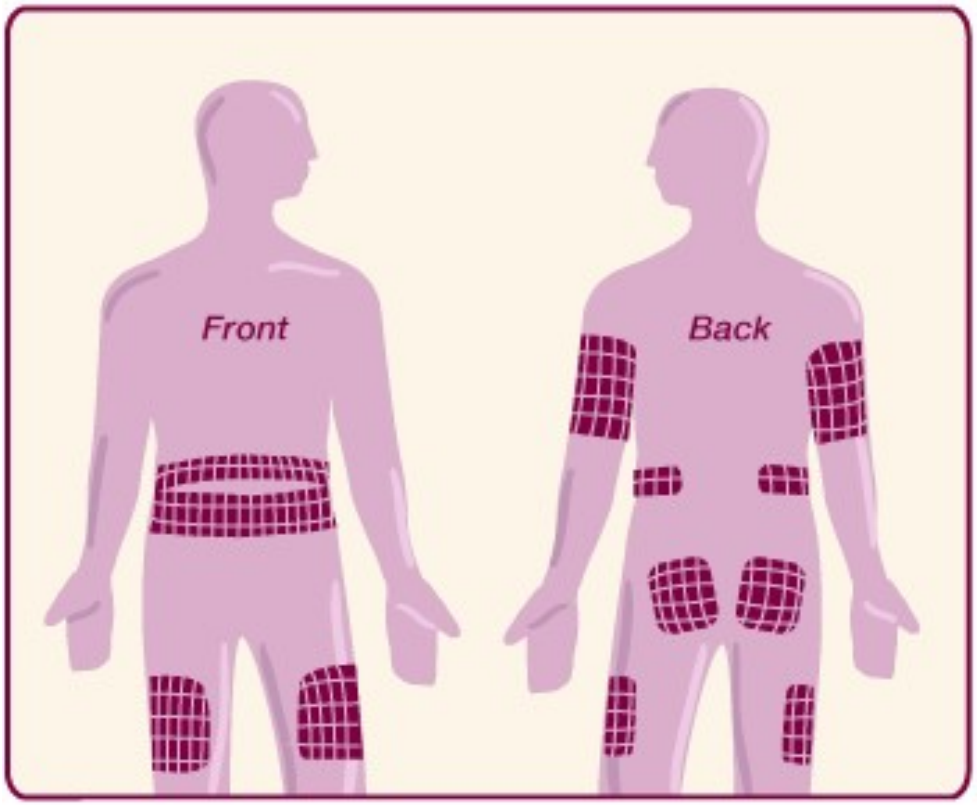
Peripheral pulses (of foot)

- Play video (005)*

* Open video through the link provided

Insulin injection technique

1. Check and match the units of insulin and syringe.
2. Push air (equal to the amount of required insulin) into the vial of insulin. In case of split-mixed insulin, push air first into the vial of intermediate acting, then into short acting insulin. Pushing air is not mandatory; it aids easy drawing of insulin.
3. Draw insulin in the syringe. In split-mixed, draw short acting first, then intermediate acting (after shaking the vial); do not shake the syringe after drawing insulin.
4. Select, swab and dry a proper site (abdomen/upper arm/thigh/hip).
5. Insert the whole length of needle sub-cutaneously at 45-90^0 into a pinched out skin. Then push the plunger, release the pinch and wait for 10 seconds holding the needle in situ. Then pull out the syringe. Do not rub/massage the area.
6. Secure the needle with cap without wiping.
7. Insulin injection devices (pen device- disposable or reusable) are widely available at present. Insulin remains in prefilled cartridges within the device, so there is no need to draw insulin. The dose is adjusted by dialing, and then a button is pushed to deliver insulin.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(Courtesy: Center for Global Health Research - CGHR, BADAS)

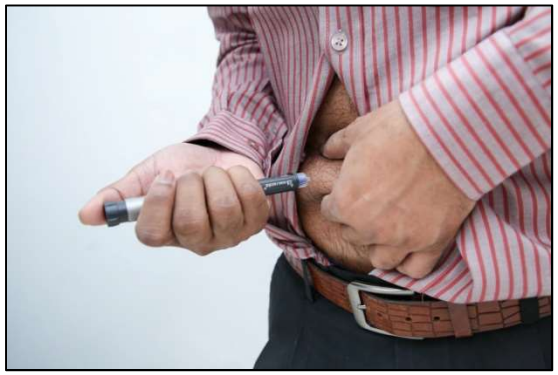
Insulin pen device – Refillable pen











(Courtesy: Center for Global Health Research - CGHR, BADAS)

Insulin pen device – Disposable pen

(Courtesy: Center for Global Health Research - CGHR, BADAS)

Insulin injection

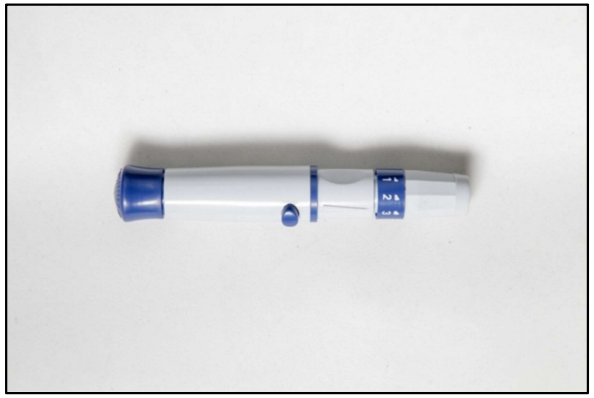
- Play video (006)*

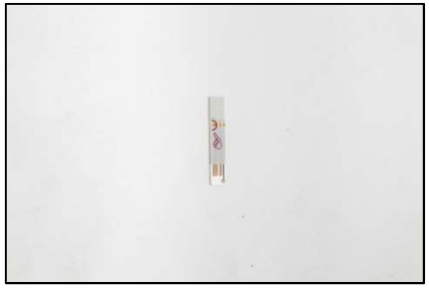
* Open video through the link provided

Blood glucose estimation by glucometer

1. Set a lancet properly in the penlet.
2. Insert a strip properly into the glucometer.
3. The meter will be automatically switched on. Follow the instructions that are displayed.
4. Check and match the code number of the strip and the glucometer.
5. Swab, dry and prick the finger (2^{nd}/3^{rd}/4^{th}) properly. Prick preferably over the medial sides of the finger tips.
6. Prepare a drop of blood on finger tip and touch the drop with the test-site of the strip. Blood will be spontaneously taken up by the strip.
7. Press the punctured site of the finger with cotton.
8. Read the result on display of the meter.
9. After completion, discard the strip and lancet. Switch the meter off.

Most of the glucometers used now-a-days are operated by this method. However, different meters have different operating system; so follow the instruction manual of the particular meter.





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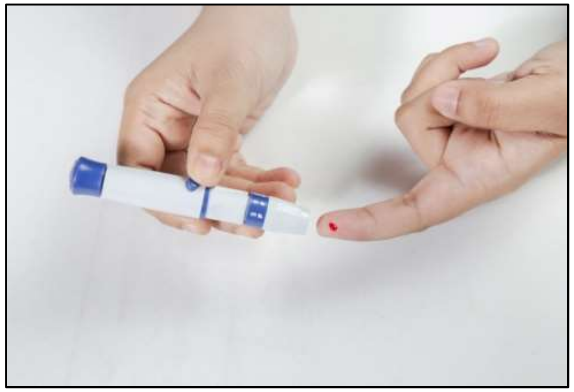

(Courtesy: Center for Global Health Research - CGHR, BADAS)

Glucometer use

- Play animation (007)*
- Play video (008)*

* Open video through the link provided

Summary

- ‘SDT-2’ will help to develop/improve practical skill in anthropometric measurements, foot exam, and practical knowledge in insulin injection and glucometer use.
- All these will aid in improved care in diabetes, and help in assessment and prevention of complications of diabetes.

Thank you for your time