جامعة المستقبل
كلية التقنيات الصحية والطبية
قسم تقنيات الاشعة
المرحلة الثالثة

Radiography
Cervical spine

BY
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Cervical vertebrae
Lateral erect

- **Position of patient and image receptor**
- • The patient stands or sits with either shoulder against the CR cassette or vertical
- Bucky.
- • The median sagittal plane should be adjusted such that it is parallel with the
- image receptor.
- • The head should be adjusted such that the angle of the mandible is not
- superimposed over the upper anterior cervical vertebra or the occipital bone does
- not obscure the posterior arch of the atlas.
- • To aid immobilisation, the patient should stand with the feet slightly apart and
- with the shoulder resting against the cassette stand.
- • In order to demonstrate the lower cervical vertebra, the shoulders should be
- depressed, as shown in the photograph. This can be achieved by asking the patient
- to relax their shoulders downwards. The process can be aided by asking the patient
- to hold a weight in each hand (if they are capable).

IR= 24 × 30 cm (10 × 12”)

Grid

SID: 60–72” (153–183 cm) (Longer SID provides for better visualiza _tion of C7 because of less divergent rays)

Analog: 70–80 Kv

Digital Systems: 80 ± 5 kV

Lateral supine

- For trauma cases, the patient's condition usually requires the examination to be
- performed on a trolley. The lateral cervical spine projection is taken first, without
- moving the patient. The resulting radiographic image must be examined by a
- medical officer to establish whether the patient's neck can be moved for other
- projections.
- **24 × 30 cm (10 × 12") portrait**
- **• Grid**
- **• SID: 60–72" (153–183 cm)**
- **Analog: 70–80 Kv**
  Digital Systems: 80 ± 5 kV

Antero-posterior – first and second cervical vertebrae (open mouth)

- **Position of patient and image receptor**
- • The patient lies supine on the Bucky table or, if erect positioning is preferred, sits
- or stands with the posterior aspect of the head and shoulders against the vertical
- Bucky detector system.
- • The medial sagittal plane is adjusted to coincide with the midline of the image
- receptor, such that it is at right-angles to the image receptor.
- • The neck is extended, if possible, such that a line joining the tip of the mastoid
- process and the inferior border of the upper incisors is at right-angles to the
- cassette. This will superimpose the upper incisors and the occipital bone, thus
- allowing clear visualisation of the area of interest.
- • The receptor is centred at the level of the mastoid process.

18 × 24 cm (8 × 10″) portrait

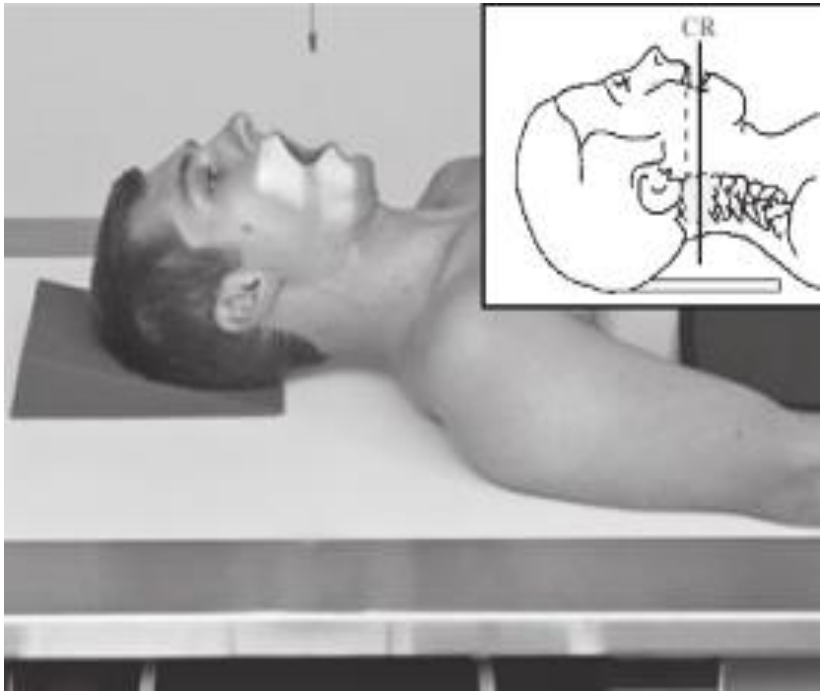
- Grid

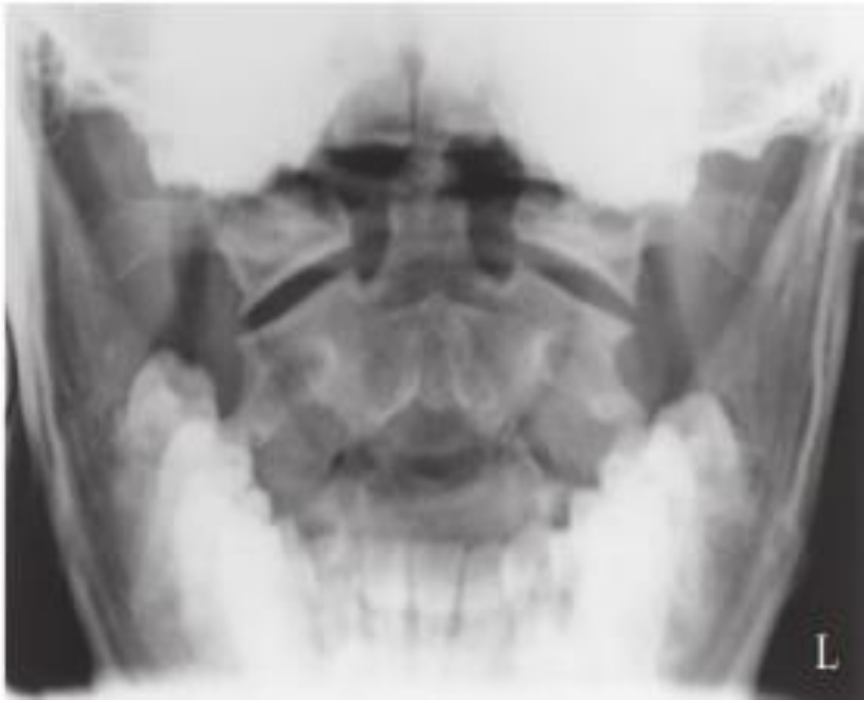
SID: 40″ (102 cm)

Analog: 70–80 kV

Digital Systems: 80 ± 5 kV

AP open mouth for C1-C2





Antero-posterior – third to seventh cervical vertebrae (Basic)

- **Position of patient and image receptor**
- The patient lies supine on the Bucky table or, if erect positioning is preferred, sits
- or stands with the posterior aspect of the head and shoulders against the vertical
- Bucky detector system
- The median sagittal plane is adjusted to be at right-angles to the image receptor
- and to coincide with the midline of the table or Bucky.
- • The neck is extended (if the patient's condition will allow) so that the lower part
- of the jaw is cleared from the upper cervical vertebra.

- **Direction and location of the X-ray beam**
- The collimated beam is directed with a 5–15° cranial angulation, such that the
- inferior border of the symphysis menti is superimposed over the occipital bone.
- • The beam is centred in the midline towards a point just below the prominence of
- the thyroid cartilage through the fifth cervical vertebra

18 × 24 cm (8 × 10″) or 24 × 30 cm(10 × 12″) portrait

- Grid

SID: 40″ (102 cm)

Analog: 70–80 kV

Digital Systems: 80 ± 5 kV

Lateral – flexion and extension

- These projections may be required, but only at the request of a medical officer, to
- supplement the basic projections in cases of trauma, subluxation, or pathology,
- rheumatoid arthritis (and often before surgery to assess movement in the neck
- for insertion of an endotracheal tube). The degree of movement and any change in
- the relationship of the cervical vertebrae can also be assessed. If an injury is
- suspected or is being followed up, then an experienced trauma doctor must be
- present to supervise flexion and extension of the neck.

- **Position of patient and image receptor**
- The patient is positioned as for the lateral basic or lateral supine projections;
- however, erect positioning is more convenient. The patient is asked to flex the neck
- and to tuck the chin in towards the chest as far as is possible.
- • For the second projection, the patient is asked to extend the neck by raising the
- chin as far as possible.
- • Immobilisation can be facilitated by asking the patient to hold on to a solid
- object, such as the back of a chair.
- • The image receptor is centred to the mid-cervical region and if using a CR
- cassette this may have to be placed transversely, depending on the degree of
- movement and the cassette size used.
- • If imaged supine, the neck can be flexed by placing pads under the neck.
- Extension of the neck can be achieved by placing pillows under the patient's
- shoulders.
- **Warning:** Functional study Do not attempt on possible trauma patients

• 24 × 30 cm (10 × 12″) portrait
• Grid
SID: 60–72″ (153–183 cm)
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THANK YOU
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