Fascial Planes of the Neck and Elsewhere

**DEEP FASCIA OF NECK**

Lateral view to show the 4 layers

- Prevertebral fascia (layer 4)
- Carotid sheath (layer 3)
- Extensor muscles
- Prevertebral muscles
- Oesophagus
- Nasopharynx
- Oropharynx
- Laryngopharynx
- Investing fascia (layer 1)
- Pretracheal fascia (layer 2)

Axial (cross) section to show 4 layers

- Prevertebral fascia (layer 4)
- Investing fascia (layer 1)
- Carotid sheath (layer 3)
- Pretracheal fascia (layer 2)
- Trapezius
- Prevertebral muscles
- Phrenic nerve
- Sympathetic chain
- External jugular vein
- Sternocleidomastoid
- Strap muscles
- O = Oesophagus
- T = Trachea
**Anterior layer of parotid fascia** is the superficial layer of the investing fascia that has split from the stylohyoid ligament.

**Posterior layer of parotid fascia** is the deep layer of the investing fascia that has split from the stylohyoid ligament. It fuses with the parotid gland.

- LO  Lesser occipital
- GA  Great auricular
- TC  Transverse cervical
- SC  Supraclavicular
PRETRACHEAL PART OF DEEP FASCIA OF NECK

Attached to:
Hyoid bone (midline)

Attached to:
Oblique line on thyroid cartilage

Pierced by:
Thyroid vessels

Splits to enclose:
Thyroid gland in a loose bag

Passes behind:
The veins

Blends with:
Pericardium
Arch of aorta

It is deep to:
Sternothyroid
Sternohyoid
Omothyroid

Fuses with:
Carotid sheath & investing fascia behind sternomastoid

Limited above by:
Attachments of sternohyoid & sternothyroid

It slides on:
Prevertebral fascia
CAROTID SHEATH

- It fuses with pretracheal fascia and the investing fascia under sternocleidomastoid
- The ansa cervicalis is in the carotid sheath over the internal jugular vein
- Escaping from the upper sheath are:
  Glossopharyngeal (IX), superior laryngeal
  Branch of vagus (X), spinal root of accessory (XI)
  and hypoglossal (XII) nerves
PREVERTEBRAL PART OF DEEP FASCIA OF NECK

From: base of skull

Extends

To: body of T3

It lies over the muscles as shown

Under

Trapezius

Levator scapulae

Longus capitis

Longus colli

Scalenus medius

Scalenus anterior

Pierced by:
- Great auricular nerve
- Lesser occipital nerve
- Transverse cervical nerve
- Supraclavicular nerves
- Inferior root of ansa cervicalis

Lying on it:
- Sympathetic chain
- Lymph nodes
- Spinal root of accessory nerve

Deep to it:
- Cervical plexus
- Trunks of brachial plexus
- 3rd part of subclavian artery
- Phrenic nerve

It blends with the anterior longitudinal ligament. Its lower border laterally is the lower border of scalenus anterior
TISSUE SPACES IN THE NECK

PREVERTEBRAL SPACE
Closed space behind prevertebral fascia which allows infection to track down into axilla via the axillary sheath which is, itself, part of the prevertebral fascia that is dragged off by the subclavian artery as it emerges from behind scalenus anterior

RETROPHARYNGEAL SPACE
Immediately anterior to prevertebral fascia. Below, it extends behind oesophagus to diaphragm via superior and then posterior mediastinum. Infection may spread from here, laterally, behind the carotid sheath into the posterior triangle

PARAPHARYNGEAL SPACE
Lateral continuation of retropharyngeal space

SUBMANDIBULAR SPACE
Extends above investing layer of deep cervical fascia, between hyoid and mandible to mucous membrane of floor of mouth. Contains mylohyoid muscle, sublingual gland above this muscle and submandibular gland hooking around its posterior border. Infection here gives cellulitis known as LUDWIG'S ANGINA