Chapter 1. The Head & Neck

Ronald N. Bogdasarian

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Interactive Atlas of CT-Based Human Anatomy

Editors
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Interactive Atlas of CT-Based Human Anatomy

Chapter 1 The Head & Neck

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Introduction

The Interactive Atlas of CT-Based Human Anatomy is designed to assist students, physicians and other clinical professionals to learn or review the interpretation of computed tomography (CT) images and therefore, cross-sectional anatomy. The atlas also provides a strong anatomical reference for clinical practitioners.

Most of the images are axial and include the major anatomical structures of the musculoskeletal, cardiovascular, respiratory, digestive, genitourinary, reproductive, nervous, endocrine, and lymphatic systems. These images are supplemented by synchronized frontal, sagittal, and three dimensional images. The images are organized into two sets. One set contains all body systems except the lymphatic system. The other set includes the cardiovascular system and lymph node regions. Each labeled CT image is preceded by an unlabeled version of the same image. This format allows the reader to continuously test or review his or her knowledge.

An understanding of cross-sectional anatomy and the ability to properly interpret CT images is essential in nearly all fields of medicine. This atlas utilizes an intuitive format that encourages learning and review as well as serves as a basic anatomy reference. The PDF format of this atlas enables download to minimize internet requirement, stores and travels easily with user-friendly note taking and self-assessment capabilities.

The images were generated using the Varian Eclipse radiation therapy treatment program* in the University of Massachusetts Medical School Radiation Oncology Department. Physicians, an anatomist, and other multi-disciplinary medical professionals reviewed the content of each slide before the final images were generated.

Disclaimer
The anatomical content of each image was reviewed by practicing medical professionals prior to the creation of each image. Each image was ultimately created by Ronald N. Bogdasarian and thus any error that might be present should not be attributed to any of the reviewers. The author and reviewers are not responsible for any use of this atlas by third parties.

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Preface

Interactive Learning
The Interactive Atlas of CT-Based Human Anatomy is designed to engage users at multiple levels of learning. Through the continuous mental review of the labeled images with comparison to the unlabeled images, the user can improve his or her ability to identify anatomical structures and interpret the computer tomography (CT) images. Active participation by the user in these exercises with real life data, the opportunity to reflect on the information and self-assessment of the knowledge acquired provides active learning.

Active Segmentation
Another option for interactive learning is through the personal use of segmentation software. Segmentation is the active outlining of anatomical structures using computer software. Radiation therapy treatment planning systems, such as the one used for creation of this atlas, are not always available to students. The conception of segmentation and three dimensional rendering modules in free programs such as ITK-SNAP* has made this system of learning accessible to all who are interested. This Atlas can serve as a virtual projection for comparison with the user’s own work. Learning is greatest when students draw themselves. Students at the University of Massachusetts Medical School have reported that this tool is the most effective way to learn to read CT scans they have found, and comparison of their drawings to these labeled images allows for testing of accuracy.

Interactive learning is vital to the success of the medical student or any other medical professional. It is essential to use efficient, engaging learning methods with constant testing of knowledge. The Interactive Atlas of CT-Based Human Anatomy provides such a resource.

Future Versions of this Atlas

This Atlas was designed to offer full web-based interactivity. However, resources are not yet available to execute this plan. This version uses a pseudo-activation format. Each unlabeled image is followed by a labeled image which allows the user to continuously test his or her knowledge. Users may create comment boxes on each page to record personal answers and notes. To create a comment box, right click within the atlas image and select “add sticky note”.

Future versions of this Atlas will permit greater levels of interactivity. We plan to build links on the anatomical structures in order to view their names. We hope to offer users the ability to type and save their own notes directly on slides. Dedicated areas for notes will be integrated into each page. We have found that this level of interactivity improves recall and retention.

Another level of interactivity would allow the user to outline anatomical structures him or herself and compare them to these images as pro-sections. As indicated on the previous page, this can be accomplished now by downloading a segmentation tool and obtaining a CT image set of the relevant body part, or by using a radiation therapy treatment planning system. We have found this active learning process is the best way students at all levels - allied health professionals, medical students and residents - can learn normal CT anatomy and more efficiently recognize the abnormal.

This current pseudo-activated version of the atlas could easily be converted to print and has practical utility for students and medical professionals. The next iteration would encompass full web based activation with more integrated learning opportunities. We are currently seeking funding to achieve these goals.
Acknowledgements

I would like to thank the University of Massachusetts Medical School Radiation Oncology Department and the Massachusetts Medical Society for providing me with the opportunity, advice, support, and resources to complete this project.
Chapter 1
The Head & Neck

Ronald N. Bogdasarian, Andrew Chen, Richard S. Pieters, TJ FitzGerald

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- Skeletal System
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- Digestive and Respiratory Systems
- Nervous System
- Lymphatic System

Two Dimensional
- Frontal
- Sagittal
- Axial (All Structures)
- Axial (Lymphatic System)

References

Age of Subject: 17

Reviewed By:
- Richard Gacek, MD
- David Goff, MD
- Alan Stark, MD
- Of the University of Massachusetts Medical School
- Ozan Toy, BA
Skeletal System Anterior View
1. 7th Cervical Vertebra (Body)
2. 7th Cervical Vertebra (Transverse Process)
3. Clavicle (Acromial End)
4. Clavicle (Sternal End)
5. Cricoid Cartilage
6. Ethmoid Bone (Nasal Septum)
7. Ethmoid Bone (Orbital Plate)
8. Frontal Bone
9. Humerus (Head)
10. Inferior Nasal Concha Bone
11. Lacrimal Bone
12. Mandible (Body)
13. Mandible (Ramus)
14. Maxilla Bone
15. Nasal Bone
16. Parietal Bone
17. 1st Rib
18. Scapula (Acromion)
19. Scapula (Coracoid Process)
20. Sphenoid Bone (Greater Wing)
21. Sphenoid Bone (Lesser Wing)
22. Sternum (Manubrium)
23. Temporal Bone (Mastoid Process)
24. Temporal Bone (Squamous Part)
25. 1st Thoracic Vertebra (Body)
26. Thyroid Cartilage
27. Zygomatic Bone
Skeletal System Posterior View

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10. [Label]
11. [Label]
Skeletal System Posterior View
1. 1st Cervical Vertebra (Posterior Arch)
2. 2nd Cervical Vertebra (Odontoid Process)
3. Clavicle (Acromial End)
4. Humerus (Head)
5. Mandible (Ramus)
6. Occipital Bone (External Occipital Protuberance)
7. Parietal Bone
8. 1st Rib
9. Scapula (Spine)
10. Temporal Bone (Mastoid Process)
11. 1st Thoracic Vertebra (Lamina)
Muscular System Anterior View
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Muscular System Anterior View
1. Deltoid Muscle
2. Inferior Rectus Muscle
3. Lateral Rectus Muscle
4. Masseter Muscle
5. Medial Rectus Muscle
6. Pectoralis Major Muscle
7. Platyser Muscle
8. Sternocleidomastoid Muscle
9. Sternohyoid Muscle
10. Sternothyroid Muscle
11. Superior Oblique Muscle
12. Superior Rectus Muscle
13. Temporalis Muscle
14. Trapezius Muscle
Deep Muscular System
Anterior View
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Deep Muscular System
Anterior View
1. Biceps Brachii Short Head Tendon
2. Levator Scapulae Muscle
3. Omohyoid Muscle
4. Pectoralis Minor Muscle
5. Scalene Anterior Muscle
6. Scalene Middle and Posterior Muscles
7. Sternothyroid Muscle
8. Subclavius Muscle
9. Subscapularis Muscle
10. Supraspinatus Muscle
11. Serratus Anterior Muscle
12. Trapezius Muscle

Musculoskeletal System
Posterior View
1. Deltoid Muscle
2. Infraspinatus Muscle
3. Levator Scapulae Muscle
4. Nuchal Ligament
5. Rhomboid Muscle
6. Splenius Capitis Muscle
7. Splenius Cervicis Muscle
8. Sternocleidomastoid Muscle
9. Supraspinal Ligament
10. Teres Major Muscle
11. Trapezius Muscle
Deep Muscular System
Posterior View

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Deep Muscular System
Posterior View
1. Digastric Muscle
2. Inferior Obliquus Capitis Muscle
3. Infraspinatus Muscle
4. Levator Scapulae Muscle
5. Longissimus Capitis Muscle
6. Rectus Capitis Posterior Major Muscle
7. Rectus Capitis Posterior Minor Muscle
8. Splenius Cervicis Muscle
9. Superior Obliquus Capitis Muscle
10. Supraspinatus Muscle
11. Teres Major Muscle
12. Transversospinalis Muscles

Vascular System Anterior View
1. Anterior Jugular Vein
2. Brachiocephalic Trunk
3. Brachiocephalic Vein
4. Common Carotid Artery
5. External Jugular Vein
6. External Carotid Artery
7. Facial Vein
8. Internal Carotid Artery
9. Internal Jugular Vein
10. Subclavian Artery
11. Subclavian Vein
12. Transverse Cervical Vein
13. Vertebral Artery
Vascular System Posterior View
1. Aortic Arch
2. Brachiocephalic Trunk
3. Brachiocephalic Vein
4. Common Carotid Artery
5. External Jugular Vein
6. External Carotid Artery
7. Facial Vein
8. Internal Carotid Artery
9. Internal Jugular Vein
10. Subclavian Artery
11. Subclavian Vein
12. Transverse Cervical Vein
13. Vertebral Artery
Digestive and Respiratory Systems Anterior View

Digestive System
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Musculoskeletal System
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Respiratory System
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14.

Note: The Digestive and Respiratory Systems are shown together in the Head and Neck because of their overlapping and closely related structures. The muscles of the tongue and the tonsils are also included.
Digestive and Respiratory Systems Anterior View

Digestive System
1. Esophagus
2. Parotid Gland
3. Submandibular Gland
4. Teeth (See Note Opposite)
Musculoskeletal System
5. Cricoid Cartilage
6. Thyroid Cartilage
7. Genioglossus Muscle
8. Geniohyoid Muscle
9. Mylohyoid Muscle
10. Tongue Dorsum
Respiratory System
11. Laryngopharynx
12. Lung
13. Nasopharynx
14. Trachea

Note: The Digestive and Respiratory Systems are shown together in the Head and Neck because of their overlapping and closely related structures. The muscles of the tongue and the tonsils are also included.

Note: Moving to the right of the viewer, starting with the selected tooth: Top Teeth: Central Incisor, Lateral Incisor, Canine, First Premolar, Second Premolar, First Molar, Second Molar.
Note: The Digestive and Respiratory Systems are shown together in the Head and Neck because of their overlapping and closely related structures. The muscles of the tongue and the tonsils are also included.
Note: The Digestive and Respiratory Systems are shown together in the Head and Neck because of their overlapping and closely related structures. The muscles of the tongue and the tonsils are also included.
Nervous System Anterior View
1. Cerebellum
2. Cerebrum
3. Cochlea
4. Eye Globe
5. Lens
6. Medulla Oblongata
7. Optic Chiasm
8. Optic Nerve
9. Pituitary Gland
10. Pons
11. Retina
12. Spinal Cord
Deep Nervous System Anterior View

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Deep Nervous System Anterior View
1. Cerebellum
2. Corpus Callosum
3. Hypothalamus
4. Lateral Ventricle
5. Medulla Oblongata
6. Midbrain
7. Optic Chiasm
8. Optic Nerve
9. Pituitary Gland
10. Pons
11. Thalamus
12. Spinal Cord

Nervous System Posterior View
1. Cerebellum
2. Cerebrum
3. Spinal Cord
Deep Nervous System
Posterior View

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Removed Structures Relative to Slide 26: The Cerebellum, Cerebrum, and Cochlea Structures.
Deep Nervous System
Posterior View
1. Corpus Callosum
2. Eye Globe
3. Lateral Ventricle
4. Medulla Oblongata
5. Midbrain
6. Optic Nerve
7. Pineal Body
8. Pons
9. Retina
10. Spinal Cord
11. Thalamus
12. 3rd Ventricle
13. 4th Ventricle

Removed Structures Relative to Slide 26: The Cerebellum, Cerebrum, and Cochlea Structures.
Note: Only the head and neck lymph node levels are included in this three-dimensional image. Use the two dimensional axial images to view descriptive names of lymph node regions. The major arteries and veins of the head and neck are included in this image to show their spatial relationship with the Lymph Node Regions. http://www.ajronline.org/doi/pdf/10.2214/ajr.174.3.1740837 is an excellent resource to understand better the lymphatic drainage of the head and neck.
Lymphatic System Anterior View
1. Head & Neck Level 1A
2. Head & Neck Level 1B
3. Head & Neck Level 2A
4. Head & Neck Level 2B
5. Head & Neck Level 3
6. Head & Neck Level 4
7. Head & Neck Level 5
8. Head & Neck Level 6
9. Retropharyngeal

Note: Only the head and neck lymph node levels are included in this three-dimensional image. Use the two dimensional axial images to view descriptive names of lymph node regions. The major arteries and veins of the head and neck are included in this image to show their spatial relationship with the Lymph Node Regions. http://www.ajronline.org/doi/pdf/10.2214/ajr.174.3.1740837 is an excellent resource to understand better the lymphatic drainage of the head and neck.
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Lymphatic System Posterior View
1. Head & Neck Level 1B
2. Head & Neck Level 2A
3. Head & Neck Level 2B
4. Head & Neck Level 3
5. Head & Neck Level 4
6. Head & Neck Level 5
7. Head & Neck Level 6
8. Retropharyngeal

Note: Only the head and neck lymph node levels are included in this three-dimensional image. Use the two dimensional axial images to view descriptive names of lymph node regions. The major arteries and veins of the head and neck are included in this image to show their spatial relationship with the Lymph Node Regions. http://www.ajronline.org/doi/pdf/10.2214/ajr.174.3.1740837 is an excellent resource to understand better the lymphatic drainage of the head and neck.
Digestive System
1. First Molar
2. Sublingual Gland

Musculoskeletal System
3. Ethmoid Sinus (Air Cells)
4. Frontal Bone (Orbital Surface)
5. Mandible (Body)
6. Maxillary Sinus
7. Zygomatic Bone (Orbital Surface)
8. Digastric Muscle
9. Genioglossus Muscle
10. Geniohyoid Muscle
11. Mylohyoid Muscle
12. Tongue Muscle

Nervous System
13. Cerebrum (Frontal Lobe)
14. Eye Globe
15. Retina

Respiratory System
16. Inferior Nasal Concha (Turbinates)
Cardiovascular System
1.
2.
Musculoskeletal System
3.
4.
5.
6.
7.
Nervous System
8.
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15.
Cardiovascular System
1. Common Carotid Artery
2. Internal Jugular Vein

Musculoskeletal System
3. 1st Cervical Vertebra (Transverse Process)
4. 2nd Cervical Vertebra (Odontoid Process)
5. Occipital Bone (Foramen Magnum)
6. Parietal Bone
7. Temporal Bone (Squamous Part)

Nervous System
8. Cerebrum (Temporal Lobe)
9. Cochlea
10. Corpus Collosum
11. Lateral Ventricle (Body)
12. Midbrain
13. Pons
14. Thalamus
15. 3rd Ventricle
Digestive System
1.

Musculoskeletal System
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Nervous System
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Digestive System
1. Esophagus

Musculoskeletal System
2. 5th Cervical Vertebra (Body)
3. Temporal Sinus (Mastoid Air Cells)
4. Scalene Middle and Posterior Muscles
5. Sternocleidomastoid Muscle

Nervous System
6. Cerebellum
7. Cerebrum
8. Corpus Collosum (Splenium)
9. Lateral Ventricle (Body and temporal horn)
10. Medulla Oblongata
11. Midbrain
12. Pineal Body
13. Spinal Cord
14. Thalamus
15. 4th Ventricle
Cardiovascular System
1. Internal Jugular Vein

Digestive System
2. 3rd Molar

Musculoskeletal System
3. Clavicle (Body)
4. Frontal Sinus
5. Maxillary Sinus
6. Parietal Bone
7. Sphenoid Bone (Greater Wing)
8. Lateral Pterygoid Muscle
9. Medial Pterygoid Muscle
10. Platysma Muscle

Nervous System
11. Cochlea
12. Eye Lens
13. Retina
Cardiovascular System
1. Common Carotid Artery
2. External Carotid Artery
3. Internal Carotid Artery

Musculoskeletal System
4. 7th Cervical Vertebra (Transverse Process)
5. Sphenoid Bone (Pterygoid Process – Lateral Plate)
6. Parietal Bone
7. Inferior Rectus Muscle
8. Mylohyoid Muscle
9. Semispinalis Capitis Muscle
10. Splenius Capitis Muscle
11. Trapezius Muscle

Nervous System
12. Optic Nerve
13. Retina
Musculoskeletal System
1. Sphenoid Bone (Sella Turcica)

Nervous System
2. Cerebellum
3. Cerebrum (Frontal Lobe)
4. Corpus Collosum (Genu)
5. Falx Cerebri (Dura Mater)
6. Hypothalamus
7. Lateral Ventricular (Anterior Horn)
8. Medulla Oblongata
9. Midbrain
10. Optic Chiasm
11. Pons
12. Spinal Cord
13. Thalamus
14. 4th Ventricle

Respiratory System
15. Laryngopharynx
16. Nasopharynx
17. Oropharynx
18. Trachea
Musculoskeletal System
1. Coronal Suture
2. Frontal Bone
3. Parietal Bone
4. Sagittal Suture
**Cardiovascular System**
1. Superior Sagittal Sinus
2. Falx Cerebri
3. Frontal Bone
4. Parietal Bone
5. Temporalis Muscle
6. Cerebral Cortex (Frontal Lobe)

**Musculoskeletal System**
7. Central Sulcus
8. Precentral Gyrus
9. Postcentral Gyrus

**Nervous System**
The sinuses of the head, including the Frontal, Sphenoid, Maxillary, Ethmoid and Mastoid sinuses, are included in the musculoskeletal lists of this atlas due to their bony walls. They also function as parts of the respiratory system. Sinuses act to filter and warm inspired air, modulate the voice and reduce the weight of the head.
Cardiovascular System
1. Lateral Ventricle (Body)

Musculoskeletal System
2. Frontal Bone (Temporal Fossa)
3. Parietal Bone (Temporal Fossa)
4. Temporalis Muscle

Nervous System
5. Cerebral Cortex (Frontal Lobe)
6. Corpus Callosum (Genu)
Cardiovascular System  
1. Lateral Ventricle (Choroid Plexus)

Musculoskeletal System  
2. Falx Cerebri 
3. Frontal Bone (Crest, Posterior Shelf) 
4. Occipital Bone 
5. Parietal Bone

Nervous System  
6. Cerebral Cortex (Parietal Lobe) 
7. Corpus Callosum (Splenium)
Cardiovascular System
1. Lateral Ventricle
2. 3rd Ventricle

Musculoskeletal System
3. Frontal Bone
4. Occipital Bone
5. Parietal Bone

Nervous System
6. Cerebral Cortex (Frontal Lobe)
7. Corpus Callosum
8. Thalamus
<table>
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<th>Nervous System</th>
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<td>7.</td>
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<td>Cardiovascular System</td>
<td>Nervous System</td>
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<tr>
<td>1. Lateral Ventricle</td>
<td>8. Cerebral Cortex (Frontal Lobe)</td>
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<td>2. 3rd Ventricle</td>
<td>9. Thalamus</td>
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<td>3. Frontal Bone</td>
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<td>4. Frontal Sinus</td>
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<td>5. Occipital Bone</td>
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<td>6. Parietal Bone</td>
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<td>7. Temporal Bone (Squamous Part)</td>
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</table>
Cardiovascular System
1. Lateral Ventricle (Posterior Horn)
2. 3rd Ventricle
Endocrine System
3. Hypothalamus
4. Pineal Gland
Musculoskeletal System
5. Ethmoid Bone (Crista Galli)
6. Frontal Bone (Orbital Surface)

Nervous System
7. Occipital Bone
8. Parietal Bone
9. Squamous Suture
10. Sphenoid Bone (Greater Wing)
11. Temporal Bone (Squamous Part)
12. Cerebral Cortex (Frontal Lobe)
13. Corpus Callosum
14. Thalamus
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<td>6. Ethmoid Sinus (Air Cells)</td>
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<td>7. Frontal Bone</td>
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<td>9. Nasal Bone</td>
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<td>14. Temporal Bone (Squamous Part)</td>
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<td>Nervous System</td>
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<td>15. Cerebellum</td>
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<td>16. Cerebral Cortex (Occipital Lobe)</td>
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<tr>
<td>17. Midbrain</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>18. Optic Nerve</td>
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<tr>
<td>Endocrine System</td>
<td>Musculoskeletal System</td>
<td>Nervous System</td>
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</tr>
<tr>
<td>1. Pituitary Stalk</td>
<td>7. Occipital Bone (Crest)</td>
<td>13. Lateral Rectus Muscle</td>
</tr>
<tr>
<td>2. Ethmoid Bone (Septum)</td>
<td>9. Sphenoid Bone (Optic Canai)</td>
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</tr>
<tr>
<td>3. Frontal Bone</td>
<td>10. Sphenoid Bone (Tuberculum Sella)</td>
<td>15. Cerebellum</td>
</tr>
<tr>
<td>4. Lacrimal Bone</td>
<td>11. Temporal Bone (Squamous Part)</td>
<td>16. Cerebral Cortex (Temporal Lobe)</td>
</tr>
<tr>
<td>5. Maxilla Bone (Frontal Process)</td>
<td>12. Zygomatic Bone (Frontal process)</td>
<td>17. Lens</td>
</tr>
</tbody>
</table>
Endocrine System
1. Pituitary Gland

Musculoskeletal System
2. Ethmoid Bone (Orbital Plate)
3. Lacrimal Bone
4. Maxilla Bone (Frontal Process)
5. Nasal Bone
6. Occipital Bone (Crest)
7. Parietal Bone at the Pterion

Nervous System
8. Sphenoid Bone (Sella Turcica)
9. Zygomatic Bone (Frontal process)
10. Temporalis Muscle
11. Cerebellum
12. Cerebral Cortex (Temporal Lobe)
13. Optic Nerve
Cardiovascular System
1. Cerebral Aqueduct
2. Internal Carotid Artery
3. Superior Sagittal Sinus

Musculoskeletal System
4. Ethmoid Bone (Middle Nasal Concha or Turbinate)
5. Lacrimal Bone
6. Maxilla Bone (Frontal Process)

7. Occipital Bone (Crest)
8. Parietal Bone
9. Sphenoid Bone (Greater Wing)
10. Temporal Bone (Petrous Part)
11. Zygomatic Bone (Orbital Surface)
12. Inferior Rectus Muscle
13. Cerebellum
14. Cerebral Cortex (Temporal Lobe)
15. Eye Globe
16. Pons
17. Middle Nasal Concha

Nervous System

Respiratory System
The dotted white line around the face is a mask. Masks are used to ensure consistent position during radiation therapy treatment.
Musculoskeletal System
1. Ethmoid Sinus (Ethmoid Air Cells)
2. Sphenoid Sinus
3. Temporal Sinus (Mastoid Air Cells)

Note: By altering the contrast to a brighter level we are able to see the thin bones of the Ethmoid Air Cells. Changing the grey scale is an important diagnostic tool. Bone, soft tissue, and lung windows are important variations.

The dotted white line around the face is a mask. Masks are used to ensure consistent position during radiation therapy treatment.
Musculoskeletal System
1.
Nervous System
2.

Note: By altering the grey scale to increase visibility through bone, we are able to see the Cochlea and other bony structures.
Musculoskeletal System
1. Internal Acoustic Meatus
   (Contains Cranial Nerves 7 and 8)
Nervous System
2. Cochlea

Note: By altering the grey scale to increase visibility through bone, we are able to see the Cochlea and other bony structures.
<table>
<thead>
<tr>
<th>Cardiovascular System</th>
<th>9.</th>
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<tbody>
<tr>
<td>1.</td>
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<td>Nervous System</td>
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<td>19.</td>
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<td>Respiratory System</td>
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<td>24.</td>
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</tr>
</tbody>
</table>
Note: By altering the grey scale to increase visibility through bone, we are able to better visualize components of the temporal bone.
Cardiovascular System
1. Internal Carotid Artery
Nervous System
2. Inner Ear

Note: By altering the grey scale to increase visibility through bone, we are able to better visualize components of the temporal bone.
<table>
<thead>
<tr>
<th>Musculoskeletal System</th>
<th>Respiratory System</th>
<th>Nervous System</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ethmoid Bone (Septum)</td>
<td>20. Inferior Nasal Concha</td>
<td>17. Cerebellum</td>
</tr>
<tr>
<td>2. Inferior Nasal Concha Bone</td>
<td></td>
<td>18. Cerebral Cortex</td>
</tr>
<tr>
<td>4. Mandible (Condylar Process)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Mandible (Coronoid Process)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Maxillary Sinus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Occipital Bone (Basilar)</td>
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<td></td>
</tr>
<tr>
<td>8. Palatine Bone (Perpendicular Plate)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Sphenoid Bone (Pterygoid Process)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Temporal Bone (Zygomatic Arch)</td>
<td></td>
<td></td>
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<tr>
<td>11. Vomer Bone (Ala)</td>
<td></td>
<td></td>
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<tr>
<td>12. Zygomatic Bone (Zygomatic Arch)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Semispinalis Capitis Muscle</td>
<td></td>
<td></td>
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<tr>
<td>14. Splenius Capitis Muscle</td>
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<tr>
<td>15. Sternoceildomastoid Muscle</td>
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<tr>
<td>16. Trapezius Muscle</td>
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</tbody>
</table>
Note: By altering the grey scale to a brighter level we are able to see the soft tissue within the Maxillary Sinus.
Musculoskeletal System
1. Maxillary Sinus
2. Temporal Sinus
   (Mastoid Air Cells)
Respiratory System
3. Nostril

Note: By altering the grey scale to a brighter level we are able to see the soft tissue within the Maxillary Sinus.
<table>
<thead>
<tr>
<th>Cardiovascular System</th>
<th>Musculoskeletal System</th>
<th>Nervous System</th>
<th>Respiratory System</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Inferior Nasal Concha Bone</td>
<td>10. Palatine Bone (Perpendicular Plate)</td>
<td></td>
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</tr>
<tr>
<td>5. Mandible (Condylar Process)</td>
<td>11. Sphenoid Bone (Pterygoid Process)</td>
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<tr>
<td>6. Mandible (Coronoid Process)</td>
<td>12. Temporal Bone (Zygomatic Arch)</td>
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<td></td>
<td>13. Vomer Bone (Septum)</td>
<td>14. Zygomatic Bone (Zygomatic Arch)</td>
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<td>15. Lateral Pterygoid Muscle</td>
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<td></td>
<td>16. Longus Capitis Muscle</td>
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<td></td>
<td>17. Masseter Muscle</td>
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<td></td>
<td>18. Temporalis Muscle</td>
<td></td>
</tr>
<tr>
<td>Cardiovascular System</td>
<td>8. Occipital Bone</td>
<td>15. Semispinalis Capitis</td>
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<td></td>
</tr>
<tr>
<td>2. Vertebral Artery</td>
<td>(Perpendicular Plate)</td>
<td>17. Sternocleidomastoid Muscle</td>
<td></td>
</tr>
<tr>
<td>Digestive System</td>
<td>10. Sphenoid Bone</td>
<td>18. Trapezius Muscle</td>
<td></td>
</tr>
<tr>
<td>4. Ethmoid Bone (Septum)</td>
<td>(Mastoid Air Cells)</td>
<td>Respiratory System</td>
<td></td>
</tr>
<tr>
<td>5. Inferior Nasal Concha Bone</td>
<td>12. Vomer Bone (Septum)</td>
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<td></td>
</tr>
<tr>
<td>Digestive System</td>
<td>Musculoskeletal System</td>
<td>Nervous System</td>
<td>Respiratory System</td>
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</tr>
<tr>
<td>2. Ethmoid Bone (Septum)</td>
<td>9. Temporal Bone</td>
<td>15. Superior Obliquus</td>
<td></td>
</tr>
<tr>
<td>3. Inferior Nasal Concha Bone</td>
<td>10. Vomer Bone (Septum)</td>
<td>Capitis Muscle</td>
<td></td>
</tr>
<tr>
<td>4. Mandible (Ramus)</td>
<td>11. Zygomatic Bone</td>
<td>Cerebellum</td>
<td></td>
</tr>
<tr>
<td>5. Maxilla Bone</td>
<td>12. Digastric Muscle</td>
<td>Medulla Oblongata</td>
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<tr>
<td>6. Occipital Bone</td>
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<td>Respiratory System</td>
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<tr>
<td>7. Palatine Bone (Perpendicular Plate)</td>
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<tr>
<td>Digestive System</td>
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</tbody>
</table>
| 1.              | 9.  
| 2.              | 10. 
| Musculoskeletal System | 12.  
| 3.              | 13. 
| 5.              | 15. 
| 6.              | 16. 
| 7.              | 17. 
| 8.              | 18.  

The image seems to be a diagram of a cross-sectional view of the head and neck, possibly illustrating various systems and structures. Numbers correspond to specific anatomical parts or systems, but without clearer labels or context, it's challenging to identify them precisely. The diagram includes a skull and several labeled areas, indicating different bones, tissues, or organs, but the exact identification would require more context or labels from the diagram itself.

The Soft Palate appears distorted, likely due to a swallow or other movement during the scanning process.
<table>
<thead>
<tr>
<th>Cardiovascular System</th>
<th>Musculoskeletal System</th>
<th>Respiratory System</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Facial Vein</td>
<td>8. 2nd Cervical Vertebra (Lamina)</td>
<td>17. Nasopharynx</td>
</tr>
<tr>
<td>4. Vertebral Artery</td>
<td>11. Longus Capitis Muscle</td>
<td></td>
</tr>
<tr>
<td>Digestive System</td>
<td>12. Longus Colli Muscle</td>
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</tr>
<tr>
<td>7. Uvula</td>
<td>15. Platysma Muscle</td>
<td></td>
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<td></td>
<td>16. Tongue Dorsum</td>
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<tr>
<td>Digestive System</td>
<td>Musculoskeletal System</td>
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</tr>
<tr>
<td>1. Soft Palate</td>
<td>4. 2nd Cervical Vertebra (Spinous Process)</td>
<td></td>
</tr>
<tr>
<td>2. Uvula</td>
<td>5. Mandible (Ramus)</td>
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<tr>
<td>Lymphatic System</td>
<td>6. Nuchal Ligament</td>
<td></td>
</tr>
<tr>
<td>3. Palatine Tonsil</td>
<td>7. Digastic Muscle</td>
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</tr>
<tr>
<td></td>
<td>8. Inferior Obliquus Capitis Muscle</td>
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<tr>
<td></td>
<td>9. Levator Scapulae Muscle Muscle</td>
<td></td>
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<tr>
<td></td>
<td>10. Longissimus Capitis Muscle</td>
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<tr>
<td></td>
<td>11. Rectus Capitis Posterior Major Muscle</td>
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<tr>
<td></td>
<td>12. Scalene Anterior Muscle</td>
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<td></td>
<td>13. Semispinalis Capitis Muscle</td>
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<td></td>
<td>14. Splenius Capitis Muscle</td>
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<td></td>
<td>15. Splenius Cervicis Muscle</td>
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<tr>
<td></td>
<td>16. Sternocleidomastoid Muscle</td>
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<tr>
<td></td>
<td>17. Trapezius Muscle</td>
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<tr>
<td></td>
<td>18. Oropharynx</td>
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</tbody>
</table>

**Respiratory System**: 17. Trapezius Muscle
<table>
<thead>
<tr>
<th>Cardiovascular System</th>
<th>Lymphatic System</th>
<th>Musculoskeletal System</th>
<th>Nervous System</th>
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<tr>
<td>Cardiovascular System</td>
<td>Lymphatic System</td>
<td>Musculoskeletal System</td>
<td>Nervous System</td>
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</tr>
<tr>
<td>3. Facial Vein</td>
<td></td>
<td>11. 2nd Cervical Vertebra</td>
<td></td>
</tr>
<tr>
<td>4. Internal Carotid Artery</td>
<td></td>
<td>(Spinous Process)</td>
<td></td>
</tr>
<tr>
<td>5. Internal Jugular Vein</td>
<td></td>
<td>12. 3rd Cervical Vertebra</td>
<td></td>
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<tr>
<td>6. Vertebral Artery</td>
<td></td>
<td>(Superior Articular Process)</td>
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<td>7. Teeth (See Note)</td>
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<td></td>
<td>13. Mandible (Ramus)</td>
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<td></td>
<td></td>
<td>14. Genioglossus Muscle</td>
<td></td>
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<td></td>
<td></td>
<td>15. Hyoglossus Muscle</td>
<td></td>
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<td></td>
<td>16. Masseter Muscle</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>17. Medial Pterygoid</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>19. Tongue Dorsum</td>
<td></td>
</tr>
</tbody>
</table>

**Digestive System**

- Mandible (Ramus)
- Genioglossus Muscle
- Hyoglossus Muscle
- Masseter Muscle
- Medial Pterygoid Muscle
- Mylohyoid Muscle
- Tongue Dorsum

**Note:** Moving clockwise, starting with the selected tooth: Bottom Teeth: Central Incisor, Lateral Incisor, Canine, First Premolar, Second Premolar, First Molar, Second Molar, Third Molar (Roots).
Cardiovascular System
1. Common Carotid Artery (Spinous Process)
2. External Carotid Artery
3. Internal Carotid Artery

Digestive System
4. Epiglottis
5. Submandibular Gland
6. 2nd Cervical Vertebra (Body)

Musculoskeletal System
7. 2nd Cervical Vertebra
8. 3rd Cervical Vertebra (Body)
9. Mandible (Body)
10. Digestive Muscle
11. Levator Scapulae Muscle
12. Longissimus Capitis Muscle
13. Scalene Anterior Muscle
14. Semispinalis Capitis Muscle
15. Splenius Capitis Muscle
16. Splenius Cervicis Muscle
17. Sternocleidomastoid Muscle
18. Transversospinalis Muscles
19. Trapezius Muscle
20. Laryngopharynx
21. Oropharynx
22. Vallecula

Note: The Transversospinalis Muscles Include the Semispinalis Capitis, Cervicis, and Thoracis Muscles, the Multifidus Muscles, and the Rotatores Cervicis, and Thoracis Muscles.

The Laryngopharynx is also considered part of the Digestive System.
<table>
<thead>
<tr>
<th>System</th>
<th>Label</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digestive System</td>
<td>1. Canine Tooth Root</td>
<td>7. 3rd Cervical Vertebra</td>
</tr>
<tr>
<td></td>
<td>2. Epiglottis</td>
<td>16. Platysma Muscle</td>
</tr>
<tr>
<td></td>
<td>3. Sublingual Gland</td>
<td>7. 3rd Cervical Vertebra</td>
</tr>
<tr>
<td></td>
<td>5. Lingual Tonsil</td>
<td>16. Platysma Muscle</td>
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<tr>
<td>Lymphatic System</td>
<td>5. Lingual Tonsil</td>
<td>16. Platysma Muscle</td>
</tr>
<tr>
<td>Musculoskeletal System</td>
<td>6. 3rd Cervical Vertebra (Body)</td>
<td>16. Platysma Muscle</td>
</tr>
<tr>
<td></td>
<td>11. Genioglossus Muscle</td>
<td>17. Laryngopharynx</td>
</tr>
<tr>
<td></td>
<td>15. Mylohyoid Muscle</td>
<td>18. Vallecula</td>
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</tr>
<tr>
<td>3. Facial Vein</td>
<td>11.</td>
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<tr>
<td>4. Internal Jugular Vein</td>
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</tr>
<tr>
<td>Musculoskeletal System</td>
<td>15.</td>
<td></td>
</tr>
<tr>
<td>7. 3rd Cervical Vertebra (Body)</td>
<td>16. Platysma Muscle</td>
<td></td>
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<td></td>
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<tr>
<td>Nervous System</td>
<td>17. Spinal Cord</td>
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</tr>
<tr>
<td>Respiratory System</td>
<td>18. Piriform Fossa</td>
<td></td>
</tr>
</tbody>
</table>
Musculoskeletal System
1. 4th Cervical Vertebra (Body)
2. Mandible (Mental Protuberance)
3. Nuchal Ligament
4. Thyroid Cartilage (Superior Horn)
5. Levator Scapulae Muscle
6. Longissimus Capitis Muscle
7. Omohyoid Muscle
8. Scalene Anterior Muscle
9. Semispinalis Capitis Muscle
10. Splenius Capitis Muscle
11. Splenius Cervicis Muscle
12. Sternocleidomastoid
13. Thyrohyoid Muscle
14. Transversospinalis Muscles
15. Trapezius Muscle
16. Laryngopharynx
17. Piriform Fossa
**Cardiovascular System**
1. Common Carotid Artery
2. External Jugular Vein
3. Internal Jugular Vein
4. Vertebral Artery

**Digestive System**
5. Esophagus

**Musculoskeletal System**
6. 4th Cervical Vertebra (Body)

7. 4th Cervical Vertebra (Spinous Process)
8. 5th Cervical Vertebra (Superior Articular Process)
9. Hyoid Bone
10. Thyroid Cartilage (Mental Protuberance)
11. Mandible
12. Diaphragm
13. Mylohyoid Muscle
14. Omohyoid Muscle
15. Platysma Muscle
16. Scalene Anterior Muscle
17. Scalene Middle and Posterior Muscles
18. Sternohyoid Muscle
19. Thyrohyoid Muscle
**Digestive System**
1. Esophagus

**Musculoskeletal System**
2. 4th Cervical Vertebra (Body)
3. 5th Cervical Vertebra (Transverse Process)
4. Corniculate Cartilage
5. Nuchal Ligament
6. Thyroid Cartilage
7. Mandible (Mental Protuberance)
8. Levator Scapulae Muscle
9. Longissimus Capitis Muscle
10. Semispinalis Capitis Muscle
11. Splenius Capitis Muscle
12. Splenius Cervicis Muscle
13. Sternocleidomastoid Muscle
14. Transversospinalis Muscles
15. Trapezius Muscle
16. Laryngopharynx

**Respiratory System**
<table>
<thead>
<tr>
<th>Endocrine System</th>
<th>Musculoskeletal System</th>
<th>Respiratory System</th>
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<tbody>
<tr>
<td>3. 4th Cervical Vertebra (Body)</td>
<td>10. Omohyoid Muscle</td>
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<tr>
<td>4. 5th Cervical Vertebra (Lamina)</td>
<td>11. Sternohyoid Muscle</td>
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</tr>
<tr>
<td>5. Corniculate Cartilage</td>
<td>12. Sternothyroid Muscle</td>
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</tr>
<tr>
<td>6. Thyroid Cartilage</td>
<td>13. Thyrohyoid Muscle</td>
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<td>7. Mandible (Mental Protuberance)</td>
</tr>
</tbody>
</table>
Cardiovascular System
1. Common Carotid Artery
2. External Jugular Vein
3. Internal Jugular Vein
4. Vertebral Artery

Musculoskeletal System
7. Arytenoid Cartilage
8. 5th Cervical Vertebra (Body)

Digestive System
5. Esophagus

Endocrine System
6. Thyroid Gland
9. Scalene Anterior Muscle
10. Scalene Middle and Posterior Muscles
Musculoskeletal System

1. Arytenoid Cartilage
2. 5th Cervical Vertebra (Body)
3. 6th Cervical Vertebra (Superior Articular Process)
4. Cricoid Cartilage
5. Nuchal Ligament
6. Thyroid Cartilage (Laryngeal Prominence)
7. Levator Scapulae Muscle
8. Longissimus Capitis Muscle
9. Semispinalis Capitis Muscle
10. Splenius Capitis Muscle
11. Splenius Cervicis Muscle
12. Sternocleidomastoid Muscle
13. Transversospinalis Muscles
14. Trapezius Muscle
15. Laryngopharynx

Respiratory System
<table>
<thead>
<tr>
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<th>Musculoskeletal System</th>
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<tr>
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<td>Digestive System</td>
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<td>Cardiovascular System</td>
<td>Musculoskeletal System</td>
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</tr>
<tr>
<td>3. External Jugular Vein</td>
<td>10. 7th Cervical Vertebra</td>
</tr>
<tr>
<td>5. Vertebral Artery</td>
<td>(Spinous Process)</td>
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</table>

**Image Description**: The image shows a cross-sectional view of the head and neck region, highlighting various muscles and structures, including the muscles listed in the table. The anatomical features are color-coded for easy identification, and the image includes a right (R) and left (L) label for orientation.
<table>
<thead>
<tr>
<th>Musculoskeletal System</th>
<th>Nervous System</th>
<th>Respiratory System</th>
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<tbody>
<tr>
<td>2. 7th Cervical Vertebra (Body)</td>
<td>10. Sternothyroid Muscle</td>
<td></td>
</tr>
<tr>
<td>3. Clavicle (Acromial End)</td>
<td></td>
<td>12. Laryngopharynx</td>
</tr>
<tr>
<td>4. Cricoid Cartilage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Scapula (Acromion)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. 1st Thoracic Vertebra (Transverse Process)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Longus Colli Muscle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Omohyoid Muscle</td>
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<tr>
<td>Cardiovascular System</td>
<td>Musculoskeletal System</td>
<td>Respiratory System</td>
</tr>
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<td>--------------------------</td>
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<td>8. 7th Cervical Vertebra (Body)</td>
<td>15. Platysma Muscle</td>
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<td>10. 1st Thoracic Vertebra (Superior Articular facet)</td>
<td>17. Scalene Middle and Posterior Muscles</td>
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<td>4. Internal Jugular Vein</td>
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<td>5. Vertebral Artery</td>
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<tr>
<td>Digestive System</td>
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<tr>
<td>6. Esophagus</td>
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<tr>
<td>Endocrine System</td>
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<td>7. Thyroid Gland</td>
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<td>11. Clavicle (Acromial End)</td>
<td>18. Trachea</td>
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<td>12. Cricoid Cartilage</td>
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<td></td>
<td>13. Scapula (Acromion)</td>
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<tr>
<td>Cardiovascular System</td>
<td>Musculoskeletal System</td>
<td></td>
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<tr>
<td>-----------------------</td>
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</tr>
<tr>
<td>1. Transverse Cervical Vein (Lamina)</td>
<td>8. 1st Thoracic Vertebra</td>
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<tr>
<td>Musculoskeletal System</td>
<td>9. Supraspinatus Muscle</td>
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<tr>
<td>2. 7th Cervical Vertebra (Body)</td>
<td>10. Levator Scapulae Muscle</td>
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</tr>
<tr>
<td>3. Clavical (Shaft Body)</td>
<td>11. Longissimus Capitis Muscle</td>
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</tr>
<tr>
<td>4. Humerus (Head)</td>
<td>12. Rhomboid Muscle</td>
<td></td>
</tr>
<tr>
<td>5. 1st Rib</td>
<td>13. Semispinalis Capitis Muscle</td>
<td></td>
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<td>7. Supraspinous Ligament</td>
<td>15. Splenius Cervicis Muscle</td>
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<td></td>
<td>16. Sternocephalomastoid Muscle</td>
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<td></td>
<td>17. Serratus Anterior Muscle</td>
<td></td>
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<td></td>
<td>18. Transversospinalis Muscles</td>
<td></td>
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<td></td>
<td>19. Trapezius Muscle</td>
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<tr>
<td>Cardiovascular System</td>
<td>Musculoskeletal System</td>
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<tr>
<td>1. Anterior Jugular Vein</td>
<td>8. Clavicle (Shaft Body)</td>
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</tr>
<tr>
<td>2. Common Carotid Artery</td>
<td>9. Humerus (Head)</td>
<td></td>
</tr>
<tr>
<td>3. External Jugular Vein</td>
<td>10. 2nd Rib</td>
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</tr>
<tr>
<td>5. Subclavian Artery</td>
<td>12. Scapula (Superior Angle)</td>
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</tr>
<tr>
<td>7. Vertebral Artery</td>
<td>(Body)</td>
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<tr>
<td><strong>Musculoskeletal System</strong></td>
<td>(Spinous Process)</td>
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<tr>
<td>8. Clavicle (Shaft Body)</td>
<td>14. 1st Thoracic Vertebra</td>
<td></td>
</tr>
<tr>
<td>15. 2nd Thoracic Vertebra</td>
<td>(Transverse Process)</td>
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</tbody>
</table>

| 16. Longus Colli Muscle | 17. Omohyoid Muscle |
| 22. Left Lung Upper Lobe |  |
Digestive System
1. Esophagus
2. Clavicle (Shaft Body)
3. Humerus (Head)
4. 2nd Rib
5. Scapula (Neck)
6. Scapula (Spine)
7. Scapula (Superior Angle)
8. 1st Thoracic Vertebra (Body)
9. 1st Thoracic Vertebra (Spinous Process)
10. 2nd Thoracic Vertebra (Transverse Costal facet)
11. Deltoid Muscle
12. Infraspinatus Muscle
13. Platysma Muscle
14. Scalene Anterior Muscle
15. Scalene Middle and Posterior Muscles
16. Sternocleidomastoid Muscle (Clavicular Head)
17. Sternocleidomastoid Muscle (Sternal Head)
18. Subscapularis Muscle
19. Supraspinatus Muscle
20. Surratus Anterior Muscle
21. Spinal Cord
22. Right Lung Upper Lobe
23. Trachea

Nervous System
21. Spinal Cord
Respiratory System
22. Right Lung Upper Lobe
23. Trachea
<table>
<thead>
<tr>
<th>Cardiovascular System</th>
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<tbody>
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<td>Musculoskeletal System</td>
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<td>17.</td>
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<td>18.</td>
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</tbody>
</table>
Note: The radiopaque object penetrating the left Pectoralis Major Muscle and entering the left Brachiocephalic Vein is a Central IV line. These are often used to deliver medications or nutrition into the bloodstream.
Digestive System
1. Esophagus
Musculoskeletal System
2. Clavicle (Sternal End)
3. Humerus (Head)
4. 3rd Rib
5. Scapula (Medial Border)
6. 2nd Thoracic Vertebra (Body)

Nervous System
14. Serratus Anterior Muscle
15. Teres Major Muscle

Respiratory System
16. Spinal Cord
17. Left Lung Upper Lobe
18. Right Lung Upper Lobe
19. Trachea

Note: The radiopaque object penetrating the left Pectoralis Major Muscle and entering the left Brachiocephalic Vein is a Central IV line. These are often used to deliver medications or nutrition into the bloodstream.
<table>
<thead>
<tr>
<th>Cardiovascular System</th>
<th>Musculoskeletal System</th>
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<tbody>
<tr>
<td>1. Aortic Arch</td>
<td>8. Clavicle (Sternal End)</td>
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<td>2. Brachiocephalic Trunk</td>
<td>9. Costal Cartilage</td>
</tr>
<tr>
<td>5. Subclavian Artery (Left)</td>
<td>12. 3rd Rib</td>
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<td>7. Vertebral Artery (Left)</td>
<td>14. Sternum (Manubrium)</td>
</tr>
<tr>
<td>15. Supraspinous Ligament</td>
<td>16. 2nd Thoracic Vertebra (Body)</td>
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<tr>
<td></td>
<td>17. 3rd Thoracic Vertebra (Body)</td>
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<td></td>
<td>18. Levator Scapulae Muscle</td>
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<tr>
<td></td>
<td>19. Longissimus Capitis Muscle</td>
</tr>
<tr>
<td></td>
<td>20. Pectoralis Major Muscle</td>
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<tr>
<td></td>
<td>21. Pectoralis Minor Muscle</td>
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<td>22. Rhomboid Muscle</td>
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<td></td>
<td>23. Splenius Capitis Muscle</td>
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<td>24. Splenius Cervicis Muscle</td>
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<td>25. Transversospinalis Muscles</td>
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<td>26. Trapezius Muscle</td>
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</table>
Cardiovascular System
1.
2.
Lymphatic System
3.
Cardiovascular System
1. Basilar Artery
2. Internal Carotid Artery

Lymphatic System
3. Anterior Auricular
Cardiovascular System
1.
2.
Lymphatic System
3.
4.
5.
Cardiovascular System
1. Basilar Artery
2. Internal Carotid Artery

Lymphatic System
3. Anterior Auricular
4. Facial
5. Retropharyngeal
Cardiovascular System
1.
2.
3.
4.
5.
6.
7.
8.

Lymphatic System
1.
2.
3.
4.
5.
6.
7.
8.
Cardiovascular System
1. Facial Vein
2. Internal Carotid Artery
3. Vertebral Artery
Lymphatic System
4. Anterior Auricular
5. Deep Facial
6. Occipital
7. Parotid
8. Retropharyngeal
### Cardiovascular System
1.
2.
3.

### Lymphatic System
4.
5.
6.
7.
8.
Cardiovascular System
1. Facial Vein
2. Internal Carotid Artery
3. Vertebral Artery

Lymphatic System
4. Deep Facial
5. Facial
6. Occipital
7. Posterior Auricular
8. Retropharyngeal
Cardiovascular System
1.
2.
3.

Lymphatic System
4.
5.
6.
Cardiovascular System
1. Facial Vein
2. Internal Carotid Artery
3. Vertebral Artery

Lymphatic System
4. Deep Facial
5. Facial
6. Retropharyngeal
Cardiovascular System
1.
2.
3.

Lymphatic System
4.
Cardiovascular System
1. Facial Vein
2. Internal Carotid Artery
3. Vertebral Artery
Lymphatic System
4. Retropharyngeal
Cardiovascular System
1. Facial Vein
2. Internal Carotid Artery
3. Vertebral Artery

Lymphatic System
4. Deep Facial
5. Retropharyngeal
6. Retropharyngeal (Individual Nodes)
Cardiovascular System
1. Facial Vein
2. Internal Carotid Artery
3. Vertebral Artery

Lymphatic System
4. Deep Facial
5. Facial
6. Head & Neck Level 2B
7. Parotid
8. Posterior Auricular
9. Retropharyngeal
Cardiovascular System
1. Facial Vein
2. Internal Carotid Artery
3. Vertebral Artery
Lymphatic System
4. Deep Cervical
5. Head & Neck Level 2A
6. Head & Neck Level 2B
7. Retropharyngeal
Cardiovascular System
1.
2.
3.
4.

Lymphatic System
5.
6.
7.
8.
Cardiovascular System
1. Facial Vein
2. Internal Carotid Artery
3. Internal Jugular Vein
4. Vertebral Artery

Lymphatic System
5. Deep Cervical
6. Head & Neck Level 2A
7. Head & Neck Level 2B
8. Retropharyngeal
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<th>Cardiovascular System</th>
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<tr>
<td>1. Facial Vein</td>
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<td>8. Head &amp; Neck Level 2B</td>
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<td>6. Vertebral Artery</td>
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**Lymphatic System**

7. Deep Cervical
8. Facial
Cardiovascular System
1. Common Carotid Artery
2. External Carotid Artery
3. External Jugular Vein
4. Facial Vein
5. Internal Carotid Artery
6. Internal Jugular Vein
7. Vertebral Artery

Lymphatic System
8. Deep Cervical
9. Facial
10. Head & Neck Level 1B
11. Head & Neck Level 2A
12. Head & Neck Level 2B
13. Jugulodigastric
14. Lingual
15. Retropharyngeal
16. Superficial Cervical
Cardiovascular System
1. Common Carotid Artery
2. External Jugular Vein
3. Facial Vein
4. Internal Jugular Vein
5. Vertebral Artery

Lymphatic System
6. Deep Cervical
7. Head & Neck Level 1B
8. Head & Neck Level 2A
9. Head & Neck Level 2B
10. Head & Neck Level 5
11. Submandibular
12. Superficial Cervical
Cardiovascular System
1. Common Carotid Artery
2. External Jugular Vein
3. Internal Jugular Vein
4. Vertebral Artery

Lymphatic System
5. Deep Cervical
6. Head & Neck Level 1B
7. Head & Neck Level 2A
8. Head & Neck Level 2B
9. Head & Neck Level 5
10. Submandibular
Cardiovascular System

1.
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4.

Lymphatic System

5.
6.
7.
8.
Cardiovascular System
1. Common Carotid Artery
2. External Jugular Vein
3. Internal Jugular Vein
4. Vertebral Artery

Lymphatic System
5. Deep Cervical
6. Head & Neck Level 1B
7. Head & Neck Level 3
8. Head & Neck Level 5
Cardiovascular System
1. Common Carotid Artery
2. External Jugular Vein
3. Internal Jugular Vein
4. Vertebral Artery

Lymphatic System
5. Deep Cervical
6. Head & Neck Level 1A
7. Head & Neck Level 1B
8. Head & Neck Level 3
Cardiovascular System
1. Common Carotid Artery
2. External Jugular Vein
3. Internal Jugular Vein
4. Vertebral Artery

Lymphatic System
5. Deep Cervical
6. Head & Neck Level 1A
7. Head & Neck Level 1B
8. Head & Neck Level 3
9. Head & Neck Level 5
10. Submental
Cardiovascular System
1.
2.
3.
4.

Lymphatic System
5.
6.
7.
Cardiovascular System
1. Common Carotid Artery
2. External Jugular Vein
3. Internal Jugular Vein
4. Vertebral Artery

Lymphatic System
5. Deep Cervical
6. Head & Neck Level 3
7. Head & Neck Level 5
Cardiovascular System
1. Common Carotid Artery
2. External Jugular Vein
3. Internal Jugular Vein
4. Vertebral Artery

Lymphatic System
5. Deep Cervical
6. Head & Neck Level 3
7. Head & Neck Level 5
Cardiovascular System
1. Anterior Jugular Vein
2. Common Carotid Artery
3. External Jugular Vein
4. Internal Jugular Vein
5. Vertebral Artery

Lymphatic System
6. Deep Cervical
7. Head & Neck Level 3
8. Head & Neck Level 5
Cardiovascular System
1. Anterior Jugular Vein
2. Common Carotid Artery
3. External Jugular Vein
4. Internal Jugular Vein
5. Vertebral Artery

Lymphatic System
6. Anterior Superficial Cervical
7. Deep Cervical
8. Head & Neck Level 3

9. Head & Neck Level 5
10. Head & Neck Level 6
Cardiovascular System
1. Anterior Jugular Vein
2. Common Carotid Artery
3. External Jugular Vein
4. Internal Jugular Vein
5. Vertebral Artery

Lymphatic System
6. Anterior Superficial Cervical
7. Deep Cervical
8. Head & Neck Level 3
9. Head & Neck Level 5
10. Head & Neck Level 6
Cardiovascular System
1. Anterior Jugular Vein
2. Common Carotid Artery
3. External Jugular Vein
4. Internal Jugular Vein
5. Vertebral Artery

Lymphatic System
6. Deep Cervical
7. Head & Neck Level 4
8. Head & Neck Level 5
9. Head & Neck Level 6
Cardiovascular System
1. Anterior Jugular Vein
2. Common Carotid Artery
3. External Jugular Vein
4. Internal Jugular Vein
5. Transverse Cervical Vein
6. Vertebral Artery

Lymphatic System
7. Deep Cervical
8. Head & Neck Level 4
9. Head & Neck Level 6
Cardiovascular System
1.
2.
3.
4.
5.
6.
7.
Lymphatic System
8.
9.
10.
11.
Cardiovascular System
1. Anterior Jugular Vein
2. Common Carotid Artery
3. External Jugular Vein
4. Internal Jugular Vein
5. Subclavian Artery
6. Transverse Cervical Vein
7. Vertebral Artery

Lymphatic System
8. Anterior Superficial Cervical

9. Deep Cervical
10. Head & Neck Level 4
11. Head & Neck Level 6
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<th>Cardiovascular System</th>
<th>9. Deep Cervical</th>
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<td>1. Anterior Jugular Vein</td>
<td>10. Head &amp; Neck Level 4</td>
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<tr>
<td>2. Common Carotid Artery</td>
<td>11. Head &amp; Neck Level 6 (Visceral Lymph Node Region)</td>
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<tr>
<td>3. External Jugular Vein</td>
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<tr>
<td>4. Internal Jugular Vein</td>
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<tr>
<td>5. Subclavian Artery</td>
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<tr>
<td>6. Transverse Cervical Vein</td>
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<td>7. Vertebral Artery</td>
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<tr>
<td>Lymphatic System</td>
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<tr>
<td>8. Anterior Superficial Cervical</td>
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Cardiovascular System
1. Anterior Jugular Vein
2. Brachiocephalic Trunk
3. Brachiocephalic Vein
4. Common Carotid Artery
5. Internal Jugular Vein
6. Subclavian Artery
7. Subclavian Vein
8. Vertebral Artery

Lymphatic System
9. Head & Neck Level 6
Cardiovascular System
1. Brachiocephalic Trunk
2. Brachiocephalic Vein
3. Common Carotid Artery
4. Subclavian Artery
5. Subclavian Vein
6. Vertebral Artery

Lymphatic System
7. Head & Neck Level 6

