

THE NOSE AND SINUSES

BASIC ANATOMY OF THE NOSE AND PARANASAL SINUSES

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The supporting structures of the nose are shown in Figure 51.32 . The septum consists of the anterior quadrilateral cartilage, the perpendicular plate of the ethmoid and the vomer (Figure 51.33). The lateral wall of the nasal cavity contains the superior, middle and inferior turbinates, which warm and moisten nasal airflow (Figure 51.34). There are paired frontal, sphenoid, maxillary and anterior and posterior ethmoid sinuses. The anterior nasal sinuses (frontal, maxillary and anterior ethmoid) drain into the middle meatus (between the middle turbinate and lateral wall of the nose). The posterior ethmoid and sphenoid sinuses drain into the superior meatus and sphenoethmoidal recess (between the superior turbinate and nasal septum), respectively (Figures 51.35 and 51.36). The nasal fossae and sinuses receive their blood supply via the external and internal carotid arteries. The external carotid artery supplies the interior of the nose via the maxillary and sphenopalatine arteries. The greater palatine artery supplies the antero-inferior septum via the incisive canal. The contribution from the internal carotid artery is via the anterior and posterior ethmoidal arteries, which are branches of the ophthalmic artery (Figure 51.37). All these arteries anastomose to form a plexus of vessels (Kiesselbach's plexus) on the anterior part of the nasal septum. Venous drainage is via the ophthalmic and facial veins and the pterygoid and pharyngeal plexuses. Intracranial drainage into the cavernous sinus via the ophthalmic vein is of particular clinical importance because of the potential for intracranial spread of nasal sepsis. Wilhelm Kiesselbach , 1839–1902, Professor of Otolaryngology , Erlangen, Germany . Johann Ludwig Wilhelm Thudichum , 1829–1901, biochemist and general practitioner, London, UK.). -

Orbit Nasal bone Frontal process Upper lateral of maxilla cartilage Lower lateral cartilage Fibroareolar tissue Figure 51.32 The nasal skeleton. Frontal sinus Sphenoid sinus Perpendicular plate of ethmoid Septal cartilage Vomer Anterior nasal spine Palatine bone Figure 51.33 The left side of the nasal septum. Middle turbinate Superior turbinate Inferior turbinate Figure 51.34 The right lateral nasal wall. Frontal sinus Sphenoid A ostium B Openings of SM posterior Frontal recess ethmoid cells MM and ostium C Maxillary ostium IM Openings of anterior Nasolacrimal ethmoid cells duct opening Figure 51.35 The right lateral nasal wall with turbinates removed to show the sinus ostia. A, insertion of superior turbinate; B, insertion of middle turbinate; C, insertion of inferior turbinate; IM, inferior meatus; MM, middle meatus; SM, superior meatus. Ethmoid sinus Orbit

Superior turbinate Superior meatus Middle turbinate Maxillary antrum Middle meatus Inferior turbinate Maxillary ostium Inferior meatus Figure 51.36 Coronal section through the left maxillary and ethmoid sinuses. Anterior Posterior ethmoidal ethmoidal artery artery Kiesselbach's plexus Sphenopalatine artery Greater palatine Facial artery artery Figure 51.37 Arterial blood supply to the left side of the nasal septum.

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