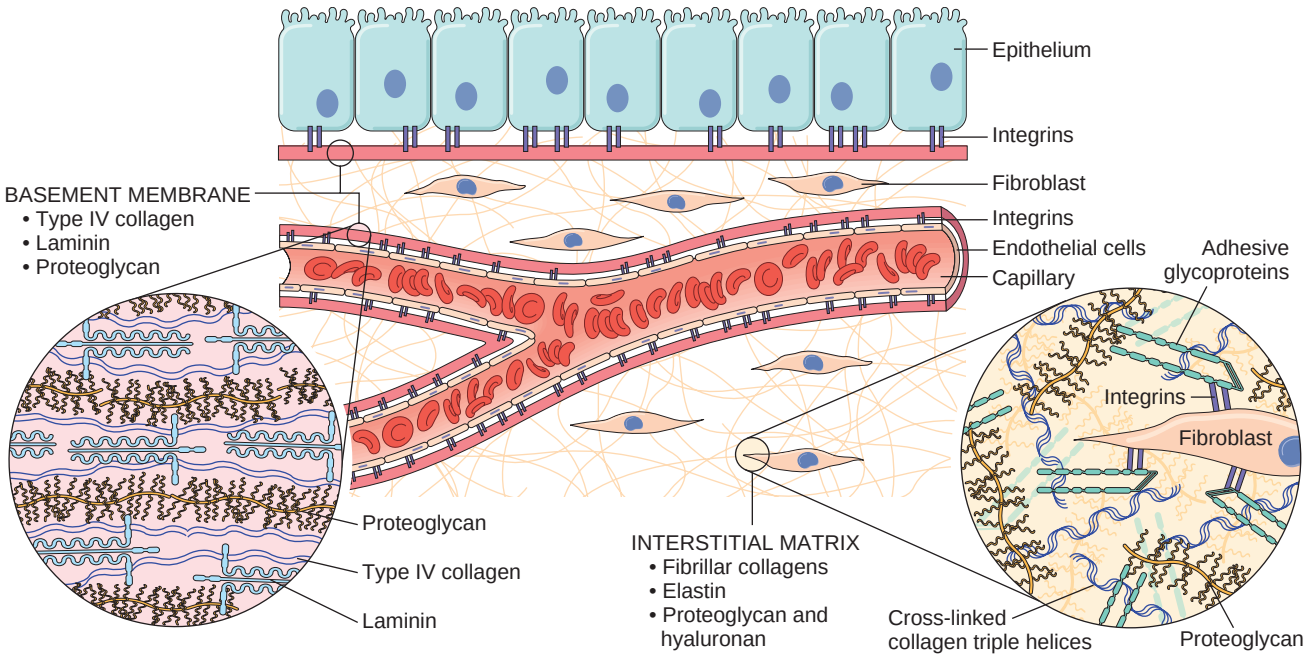

Figure 1-13 Main components of the extracellular matrix (ECM), including collagens, proteoglycans, and adhesive glycoproteins. Both epithelial and mesenchymal cells (e.g., fibroblasts) interact with ECM via integrins. Basement membranes and interstitial ECM have different architecture and general composition, although certain components are present in both. For the sake of clarity, many ECM components (e.g., elastin, fibrillin, hyaluronan, and syndecan) are not included.

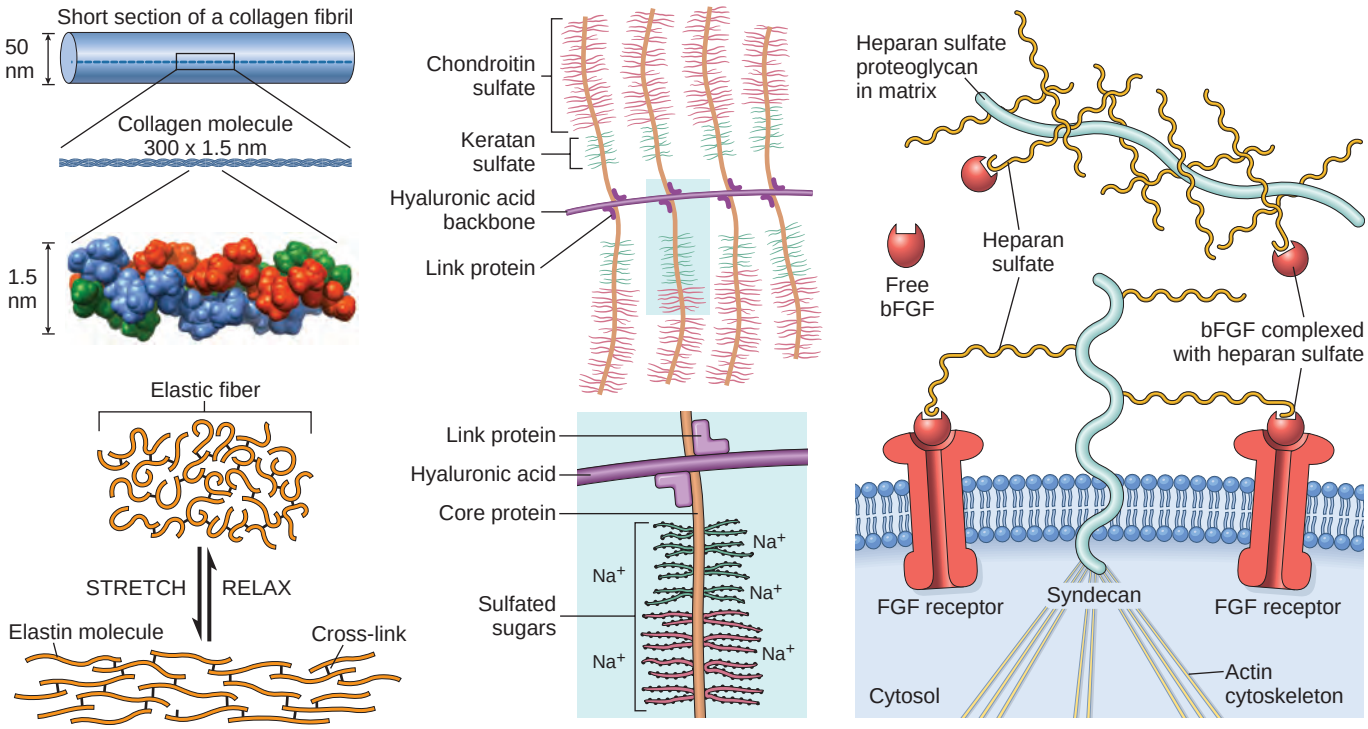

Figure 1-14 Extracellular matrix (ECM) components. **A,** Fibrillar collagen, and elastic tissue structures. Due to rodlike fibril stacking and extensive lateral cross-linking (through the activity of lysyl oxidase), collagen fibers have marked tensile strength but do not have much elasticity. Elastin is also massively cross-linked through lysyl oxidase activity but differs in having large hydrophobic segments that form a dense globular configuration at rest. As stretch is exerted, the hydrophobic domains are pulled open, but the cross-links keep the tissue intact; release of the stretch tension allows the hydrophobic domains of the proteins to refold. **B,** Proteoglycan structure. The highly negatively charged sulfated sugars on the proteoglycan "bristles" recruit sodium and water to generate a viscous, but compressible matrix. **C,** Regulation of basic fibroblast growth factor (bFGF, FGF-2) activity by ECM and cellular proteoglycans. Heparan sulfate binds bFGF secreted in the ECM. Syndecan is a cell surface proteoglycan with a transmembrane core protein and extracellular glycosaminoglycan side chains that can bind bFGF, with a cytoplasmic tail that interacts with the intracellular actin cytoskeleton. Syndecan side chains bind bFGF released from damaged ECM, thus facilitating a concentrated interaction with cell surface receptors.