The structure of cellulose and the different conformations assumed by the 3(1→4) cellulose chains and the 3(1→4) starch and 3(1→4) glycogen conformation.

(a) Cellulose chain; the D-glucose units are connected via 3(1→4) linkages.

(b) Schematic drawing showing how parallel cellulose chains are held together by hydrogen bond cross-links (bold).

(c) Schematic drawing of segments of two parallel cellulose chains, showing the random conformation of the D-glucose residues and the hydrogen bond cross-links.

(d) Schematic drawing of segments of amylose, amyllopectin, and glycogen showing the chain to assume a tightly coiled helical conformation, in which many of the hydroxyl groups face outward.
Figure 11-17

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