6.5.3 Using ultrasound

1. ultrasound; longitudinal wave with frequency greater than 20 kHz
2. piezoelectric effect; ultrasound transducer as a device that emits and receives ultrasound
3. ultrasound A-scan and B-scan
4. acoustic impedance of a medium; $Z = \rho c$
5. reflection of ultrasound at a boundary $\frac{I_r}{I_0} = \frac{(Z_2 - Z_1)^2}{(Z_2 + Z_1^2)}$
6. impedance (acoustic) matching; special gel used in ultrasound scanning
7. Doppler effect in ultrasound; speed of blood in the patient; $\frac{\Delta f}{f} = \frac{2v\cos\theta}{c}$