

# UNDERSTANDING TREE WATER POTENTIAL



Human Blood Pressure & Blood Flow

VS

Tree Water Potential & Sap Flow

→ blood flow    ↻ blood pressure

**Blood Pressure**

→ sap flow    ↻ water potential

**Water Potential**

**Exercise**

→ blood flow ↑  
 ↻ blood pressure ↑

**Hot + Dry Day**

→ sap flow ↑  
 ↻ water potential ↓

**Recommended**

**Systolic**  
 between 90 to 120 mmHg

50 70 90 120 140 160

too low ←    → too high

**Recommended (for almond)**

**Midday**  
 between -10 to -14 bar

-6 -8 -10 -14 -16 -18

too wet (over-watered) ←    → too dry (needs water)

**Systolic too low**

- dizziness
- fainting
- tiredness

**Systolic too high**

- stroke
- heart failure
- headaches

**Midday too wet**

- root hypoxia
- more disease
- reduced lifespan

**Midday too dry**

- lower yield
- wilting
- limb dieback