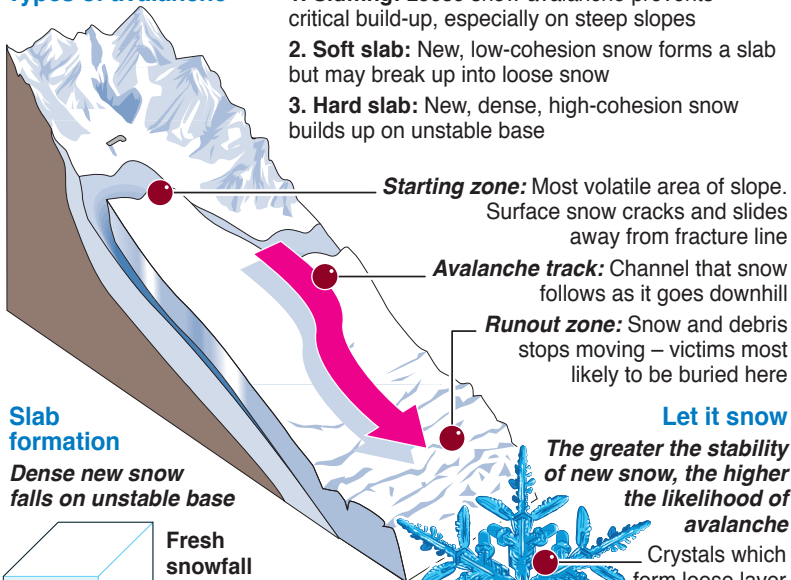


Anatomy of an avalanche

While the principal causes of an avalanche – heavy snowfall, altitude, temperature, orientation and slope angle – are generally understood, the transient nature of snow remains the main obstacle to accurate prediction

Types of avalanche

- 1. Sluffing:** Loose snow avalanche prevents critical build-up, especially on steep slopes
- 2. Soft slab:** New, low-cohesion snow forms a slab but may break up into loose snow
- 3. Hard slab:** New, dense, high-cohesion snow builds up on unstable base



Slab formation

Dense new snow falls on unstable base

Fresh snowfall
Can increase mass to critical level

Buried surface hoar:
Icy crust formerly at surface

Depth hoar snow
Large, low-density angular crystals formed by rising water vapour

Cavities formed by percolation of meltwater in Spring cause instability

Let it snow

The greater the stability of new snow, the higher the likelihood of avalanche

Crystals which form loose layer slide off (**sluff**) before critical build-up

Crystals with **riming** – frozen water droplets on surface – bond well to create thick, dangerous, high-density snow layers

