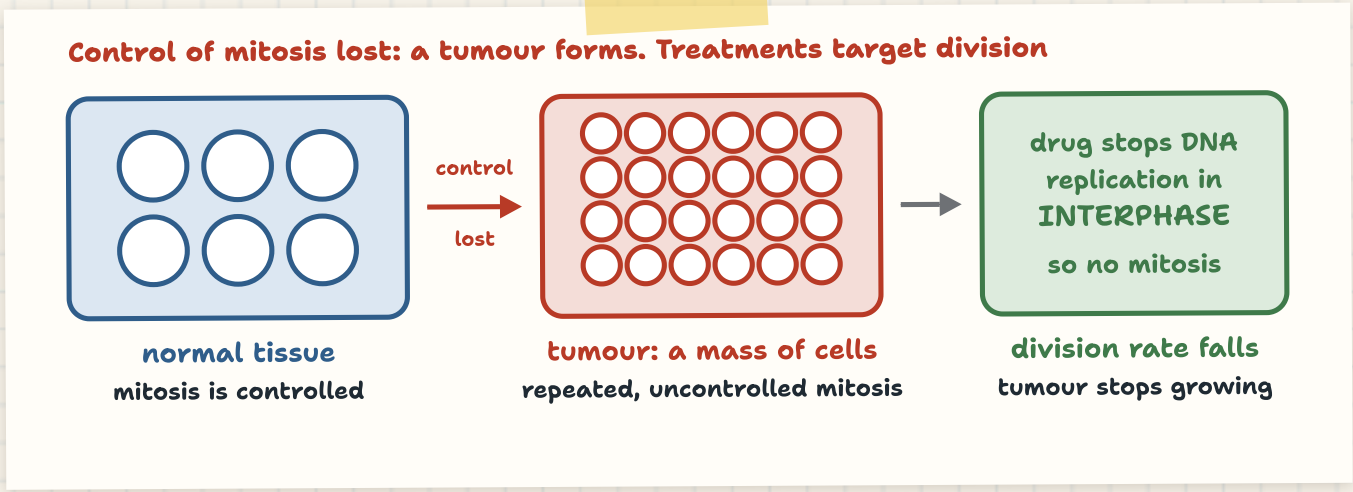
Cancer: Uncontrolled Cell Division

Cancer is uncontrolled mitosis forming a tumour; many treatments aim to slow or stop division.



Key terms

tumour	a mass of cells formed by uncontrolled cell division.
cancer	a disease in which cells divide uncontrollably by mitosis, forming tumours.
cell cycle	interphase (including DNA replication) followed by mitosis and cytokinesis; it is controlled in healthy cells.
uncontrolled division	cells keep dividing repeatedly, making more cells than the body needs.
chemotherapy	drug treatment that slows or stops division, for example by preventing DNA replication in interphase.
radiotherapy	radiation used to damage cancer cells so they stop dividing.

I can...

- [ ] Mitosis is controlled; uncontrolled division can form tumours and cancers
- [ ] Many cancer treatments are directed at controlling the rate of cell division

EXAM TRAP

Do not say cells "grow out of control" or "multiply". Say the control of cell division is lost and cells divide repeatedly by mitosis. A DNA-replication drug acts in interphase, so cells cannot enter mitosis.

4 marks: what earns them

1. Control of cell division is lost / mitosis is uncontrolled
   Not: cells grow out of control, with no reference to division
2. Cells divide repeatedly / rapidly by mitosis, forming a mass of cells
   Not: cells multiply, with no reference to repeated division or a mass
3. DNA is not replicated / copied in interphase, so cells have no copy of DNA for mitosis
   Not: drug kills the cell; stops DNA forming mitosis; drug prevents replication with no link to interphase or mitosis
4. Consequence: cells cannot enter / complete mitosis, so the rate of cell division falls and the tumour stops growing or shrinks
   Not: kills all fast cells, with no link to division

Remember

Control lost, mitosis runs on.
Cells pile up: a tumour.
No DNA copy, no mitosis.

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