

# Chapter 12

## Cell cycle, development and cancer

### A. Body organization

multicellular  
tissues, organs, organ systems

### B. Development

we became multicellular through cell division  
embryonic stages (zygote, blastula, gastrula)  
differentiation and specialization

### C. Cell cycle

phases (review)  
factors that allow cell division

physical	attachment/contact inhibition
genetic	gene regulation
limits	internal clock

### D. Stems cells and cloning

stem cells characteristics  
undifferentiated  
can divide and differentiate  
replace themselves  
adult vs embryonic

Cloning  
therapeutic  
reproductive

### E. Cancer

loss of control of cell cycle (transformation)  
mutations (sources)  
tumor types  
Risk factors genetics, environment, lifestyle, diet,..  
Treatments surgery, radiation, chemo-