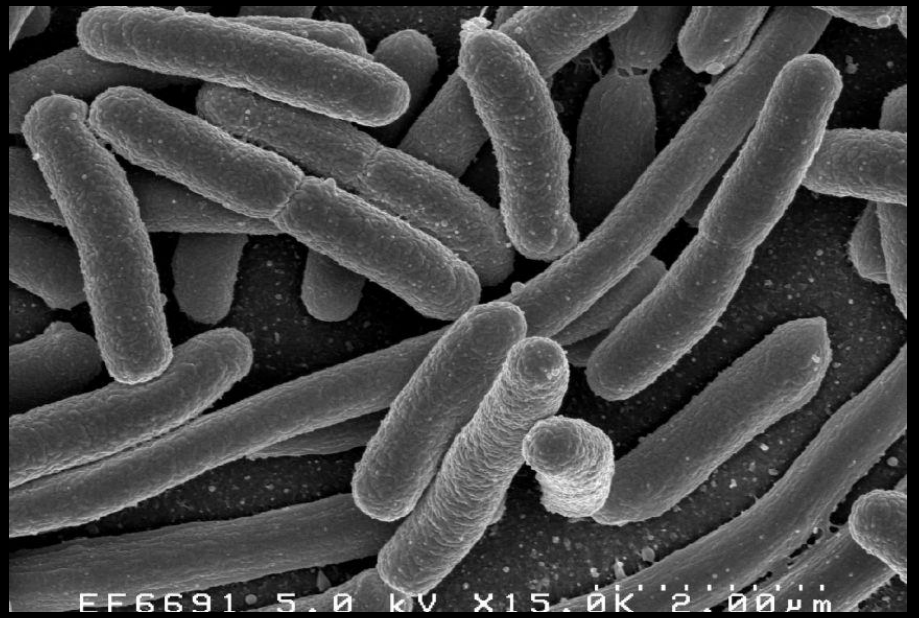
Hygiene

Basic facts for preventing bacterial growth and contamination

CME 20th of April 2023 in the Kwanza Sub-County Hospital



Dr L Salmi, 2023

What do bacteria need?

- Nutrients: Anything that can be converted to energy and glucose… (organic substances)
- Water
- Temperature: optimal 20-40 °C
- (O_2)

That’s all!

So what can we do?

Antibiotics and antiseptic substances of course!

But what can be done that **DO NOT** promote antibiotic resistance?

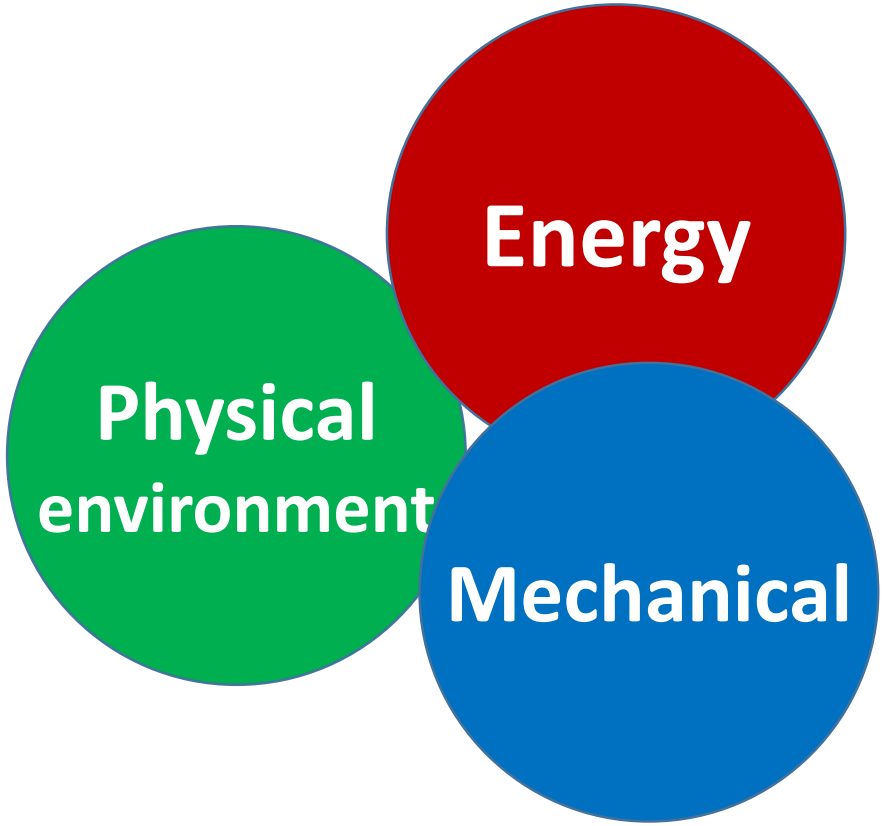
What inhibits bacterial growth?

- Heat/cold
- Lack of nutrients
- Lack of water

- Chemicals
- Radiation
- 0_2
- Mechanical removal

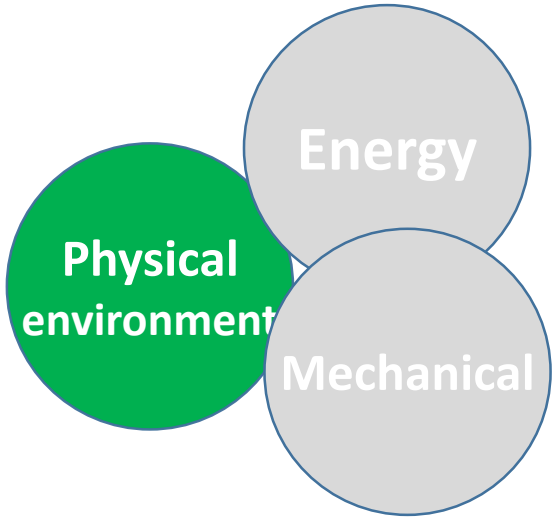
3 main areas

- Temperature
- Water
- Chemicals
- Radiation
- O_2



Nutrients

- Mechanical removal
- Avoid spreading

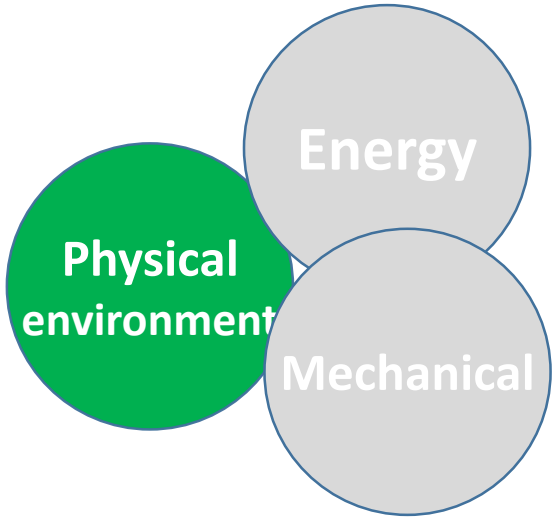


- **Temperature**: Optimal interval for growth 20-40 °C

  - Heat above 65 °C
  - Cool below -18 °C

- **Water**

  - Minimize soaking of critical surfaces
  - Remove porous/structured surfaces and waste products that prolongs evaporation

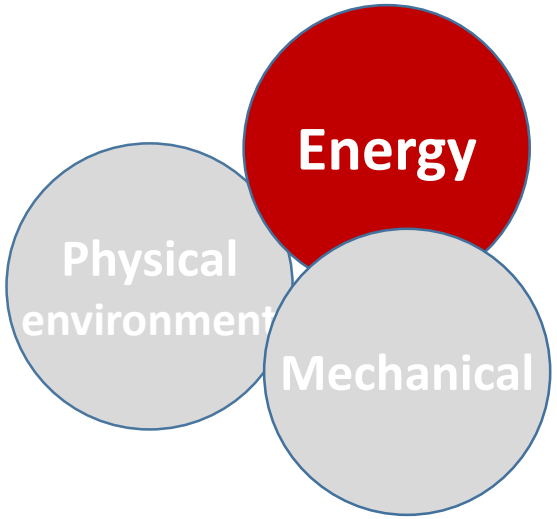


- **Chemicals**
- **Radiation**
- **O_2**

- Soap: cleans a surface only
- Alcohol: cleans with antibacterial effect
- Acid/base: above pH 9, below pH 5
- H_2O_2: antibacterial

- UV: antibacterial effect

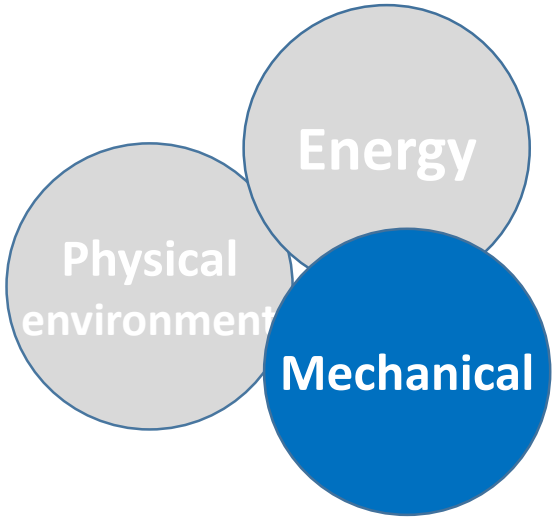
- HBOT (Hyperbaric oxygen treatment)
- VAC (Vacuum-Assisted Closure) treatment of wounds



- **Nutrients**: Anything that can be converted to glucose and energy (organic substances)

Do not feed the bacteria!

- Clean surfaces
- Remove porous/structured surfaces, e.g. wood, unpainted concrete, surface cracks, waste etc.
- Do not contaminate, e.g. hands, clothing, used materials, moving around…



- **Removal**
- **Physical barrier**

- Cleaning of critical surfaces
- Remove porous/structured surfaces, e.g. wood, concrete, etc near critical areas
- Remove contaminated material immediately
- Avoid recontamination, e.g. hands, clothing, waste, moving around…
- Use physical protection and protection gear
- Establish protected areas. Continually keep these areas in good “order”.

Example: What can you prioritize?

Physical environment

- Temperature
- Water
- Chemicals
- Radiation
- O_2

Energy

- Nutrients

Mechanical

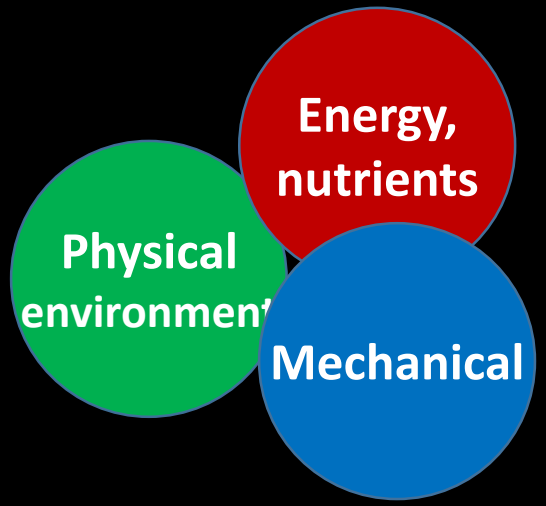
- Mechanical removal
- Avoid spreading

Examples:

- Routines for cleaning. Minimize soaking of critical surfaces.
- Use alcohol, H_2O_2, etc
- Avoid porous/structured surfaces in critical areas
- Remove used and contaminated material immediately after use
- Avoid recontamination, e.g. hands, clothing, waste, moving around. Use protection gear.
- **Identify and establish routines for "protected areas". Continually keep these areas in good "order". (This will also support procurement.)**

Example: What can you prioritize?

Think about the basics…
…and come up with local solutions



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