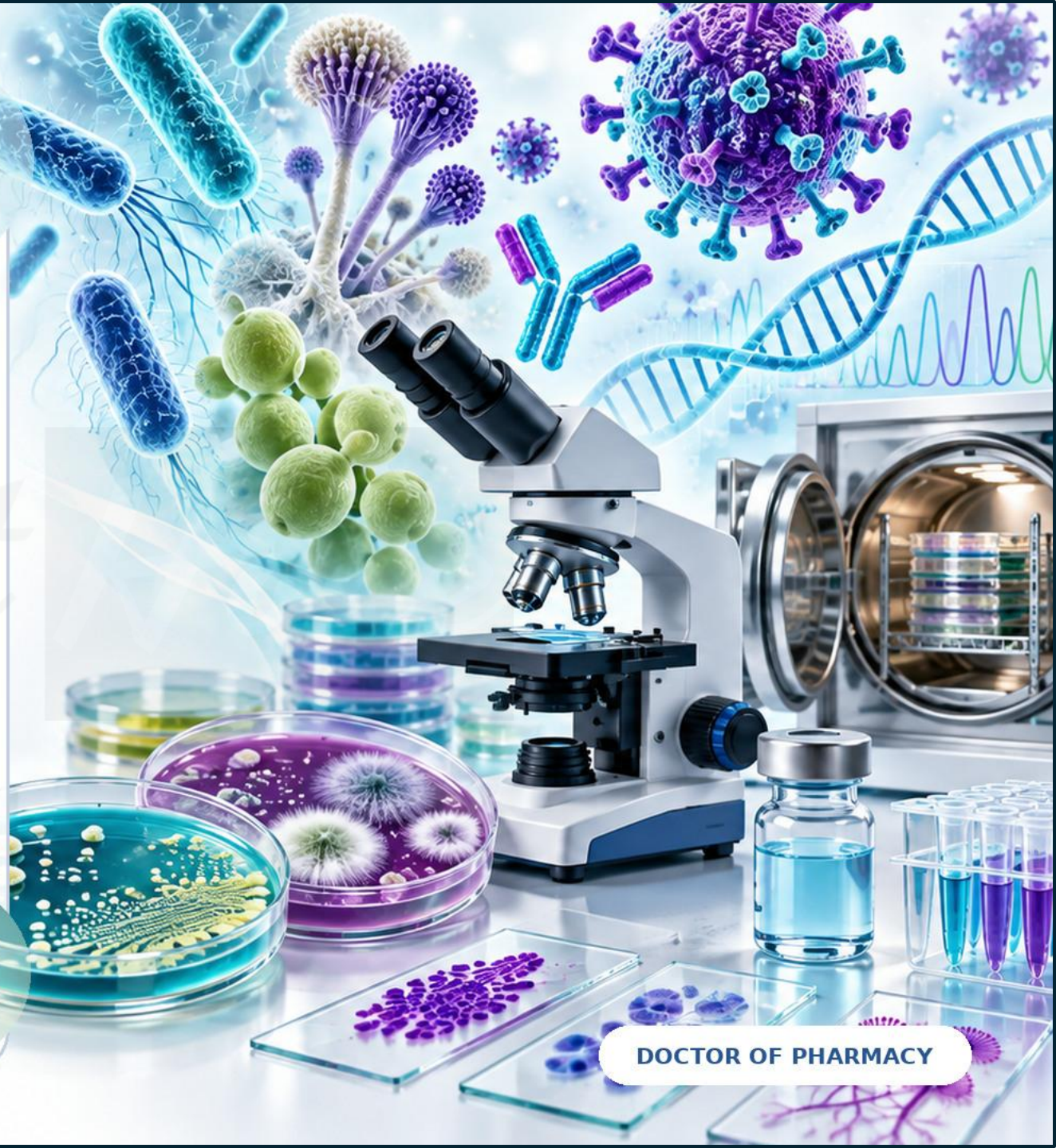
PHARM.D • YEAR 2

Pharmaceutical Microbiology

CHAPTER 6

Disinfectants, Antiseptics, Fungicidal and Virucidal Agents

PPT CHAPTER COVER



DOCTOR OF PHARMACY

Disinfectant, Antiseptic or Sterilant?

Disinfectants are used on inanimate surfaces; **antiseptics** are formulated for living tissue.

A **sterilant** is expected to inactivate all viable forms under validated conditions, while ordinary disinfection may not.

The same chemical can have different permitted uses at different concentrations. Follow the product label, contact time and material-compatibility requirements.

The word used describes the intended outcome and location, not just a chemical name. Check whether the specific formulation has the needed validated claim.

Disinfectant

inanimate surfaces



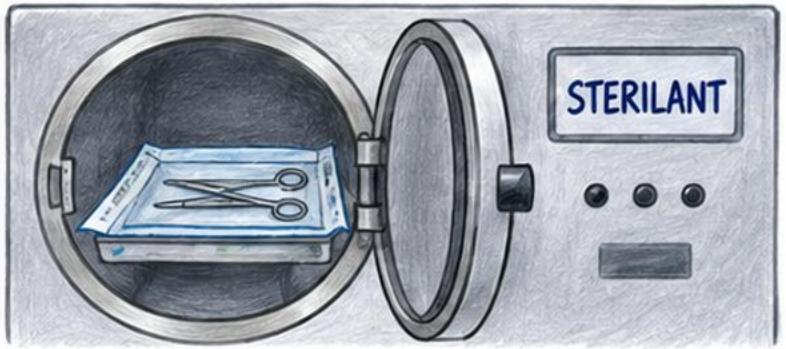
Antiseptic

living tissue



Sterilant

all viable forms (under validated conditions)

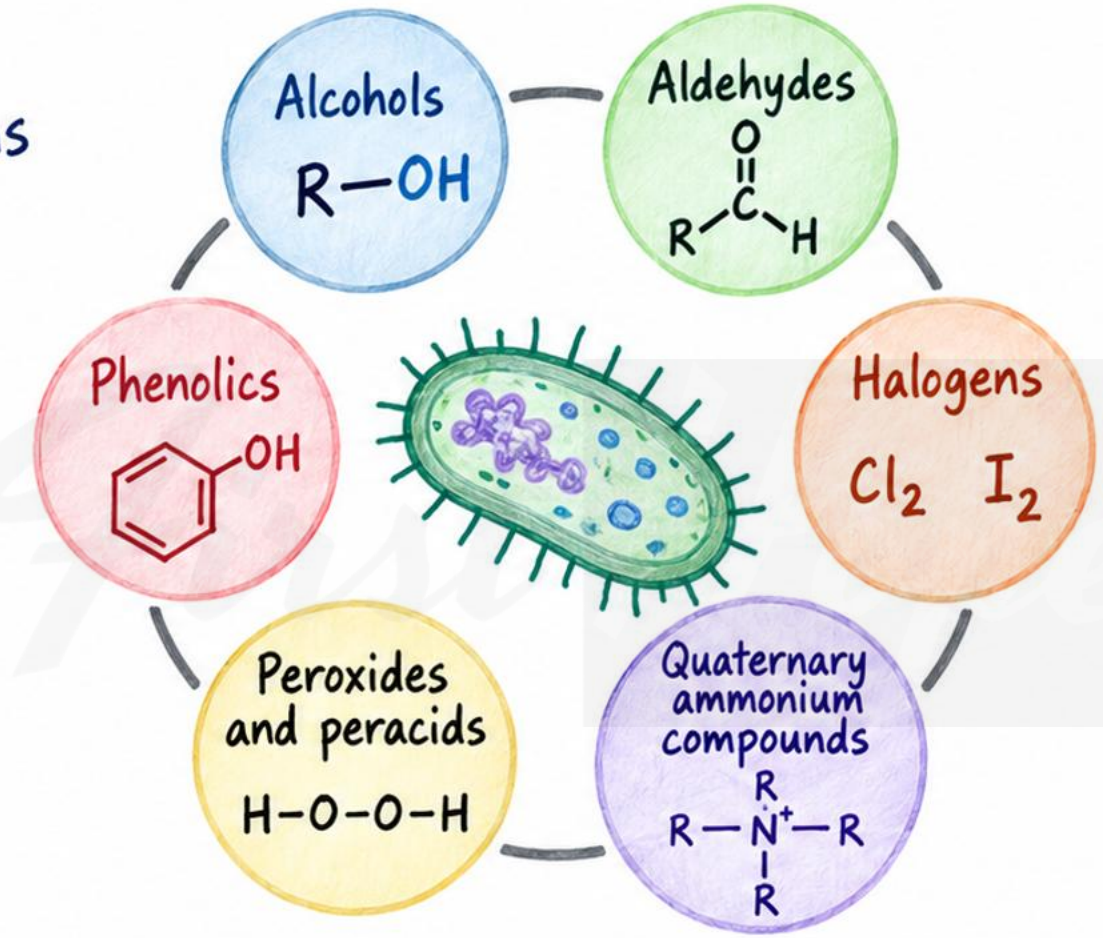


Major Chemical Classes

Alcohols disrupt membranes and proteins but are not reliable sporicides.

Aldehydes cross-link biomolecules.

Halogens such as chlorine and iodine have broad oxidative activity.



Quaternary ammonium compounds act mainly at membranes; peroxides and peracids oxidize cellular components.

Phenolics have historical and selected present uses.

Spectrum and suitability differ within each class.

No class works equally against every organism or soil condition. Concentration and compatible contact time turn a chemical's theoretical mechanism into performance.

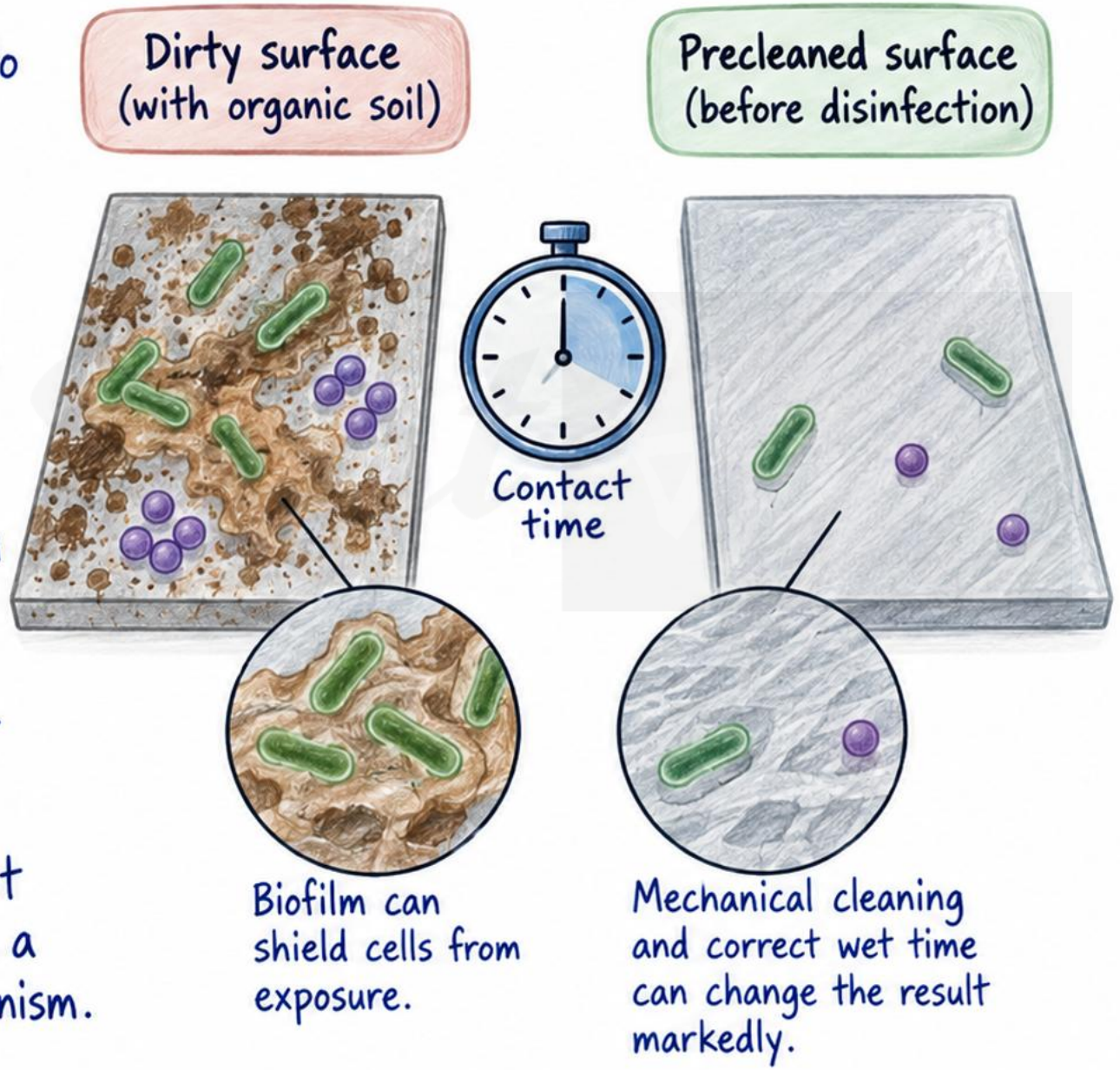
Why Real-World Performance Changes

Concentration and wet contact time matter, as do pH, temperature and organic soil.

Surface texture, biofilm and the type of microbe also affect activity.

Clean before disinfection where required, use the validated dilution and keep the surface wet for the labeled interval.

A laboratory claim cannot be transferred blindly to a different surface or organism.



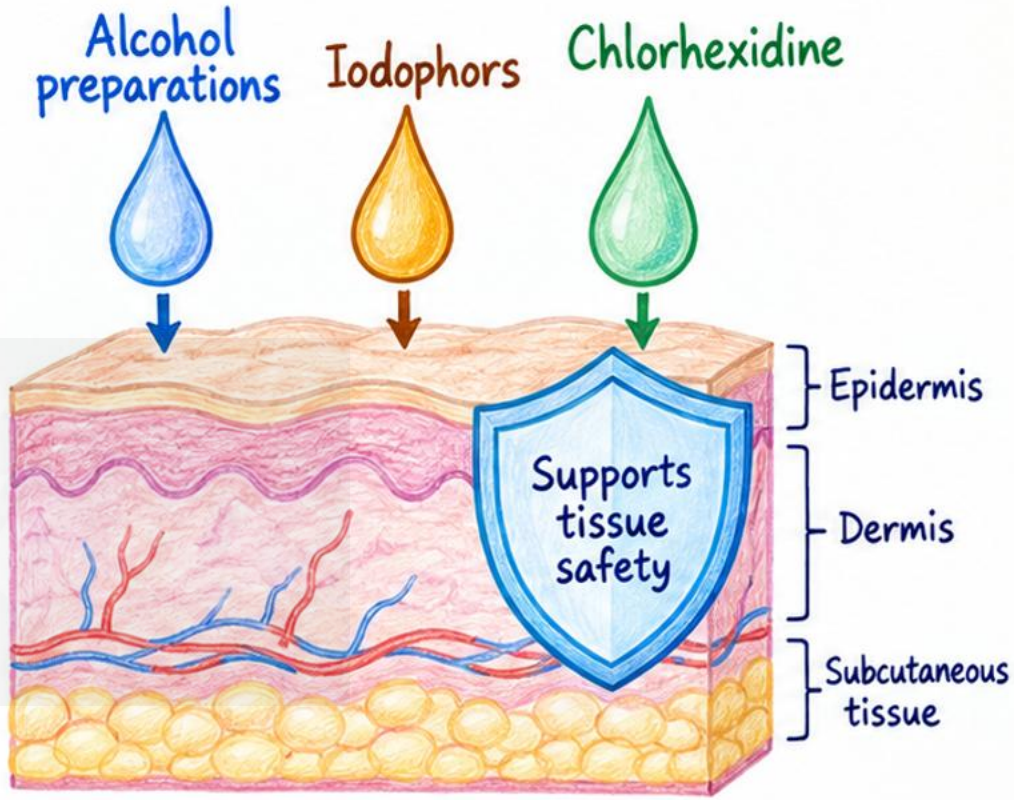
Biofilm can shield cells from exposure, while organic material may consume active agent.

Mechanical cleaning and correct wet time can change the result markedly.

Antiseptics on Living Tissue

Alcohol preparations, **iodophors** and **chlorhexidine** are common antiseptic classes, but their uses, persistence and contraindications differ. Effectiveness depends on formulation, application and skin condition.

Tissue safety sets antiseptics apart from surface disinfectants. Never substitute a laboratory disinfectant for a skin product or assume that stronger concentration is always safer.



A skin product must balance activity against **irritation** or **absorption risk**. Application area, open wounds and manufacturer instructions influence safe use.

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