

1. Spaulding Classification

Dr. Earle Spaulding, 1968. The processing level matches the infection risk of the body site the item contacts.

Critical items

- **Definition:** Enter sterile tissue or the vascular system. Highest infection risk.
- **Processing:** Must be STERILIZED. No shortcuts: critical means sterile, every time.
- **Exam favorites:** Surgical instruments, implants, cardiac catheters, needles.

Semicritical items

- **Definition:** Contact mucous membranes or nonintact skin.
- **Processing:** At least HIGH-LEVEL DISINFECTION.
- **Exam favorites:** Endoscopes, laryngoscope blades, diaphragm fitting rings.

Noncritical items

- **Definition:** Contact only intact skin.
- **Processing:** Cleaning plus low or intermediate level disinfection.
- **Exam favorites:** Bedpans, blood pressure cuffs, bed rails, linens.

EXAM TIP: Match the item to its body site FIRST, then pick the processing level. Wrong answers sit one level off.

2. Steam Sterilization Parameters

Moist heat under pressure denatures microbial proteins. Memorize these as pairs: temperature goes with time.

Cycle type	Temp	Exposure	Notes
Gravity displacement	121 C (250 F)	30 min	15 psi
Gravity displacement	132 C (270 F)	15 min	Faster gravity cycle
Dynamic air removal (prevacuum)	132 C (270 F)	4 min	Vacuum pump removes air first
Flash / IUSS	132 C (270 F)	3 min	Gravity, unwrapped, emergencies only

Memory pairs

- **121 / 30:** 121 C goes with 30 minutes (gravity).
- **132 / 15:** 132 C goes with 15 minutes (gravity).
- **132 / 4:** 132 C goes with 4 minutes (prevacuum).
- **132 / 3:** 132 C goes with 3 minutes (flash/IUSS). Shorter is not better; each cycle fits a situation.

Why cycles fail

- **Trapped air:** Air blocks steam contact and leaves unsterilized spots.
- **Overloading / oversized packs:** Steam cannot penetrate a crammed chamber.
- **Wet packs:** Moisture after the cycle compromises sterility.

EXAM TIP: The device manufacturer IFU always overrides generic parameters.

3. BI Organisms: The Two-Bug Split

The biological indicator is the gold standard: live spores that prove microbial kill. Only two organisms to learn.

Geobacillus stearothermophilus (heat-loving bug)

- **Steam sterilization:** Gravity displacement and dynamic air removal (prevacuum).
- **IUSS:** Immediate-use is still steam, so the bug does not change.
- **Hydrogen peroxide gas plasma and ozone:** These group with steam.
- **Memory anchor:** Geobacillus lives near hot springs. Heat-loving bug for heat-based processes.

Bacillus atrophaeus (dry-conditions spore)

- **Ethylene oxide (EtO):** A for atrophaeus, A for EtO gas. The gas process gets the gas-resistant spore.
- **Dry heat:** Dry conditions, dry-heat spore. It survives the long hot drought.

BI frequency rules (exam favorites)

- **At least weekly:** Run a BI in the sterilizer every week at minimum.
- **Every implant load:** Implants stay in the patient, so they get the strictest monitoring.
- **Positive BI:** Spores survived, so RECALL THE LOAD. Do not release it, do not re-run and hope.

EXAM TIP: A passing chemical indicator never overrules a failing BI.

4. Chemical Indicator Classes 1 to 6

CIs change color when exposed to sterilization variables. Higher classes tell you more, but no CI proves sterility like a BI.

Class	Name	What it tells you
1	Process indicators	External tape or label. Shows the item was exposed, nothing more.
2	Specific-test indicators	
3	Single-variable indicators	Respond to one critical variable (for example, temperature).
4	Multi-variable indicators	
5	Integrating indicators	Respond to ALL critical variables, like a BI without the spores.
6	Emulating indicators	

Placement rules

- **External CI:** On the outside of every package (usually the tape).
- **Internal CI:** Inside EVERY package, where the instruments are.
- **The trap:** A passing CI never overrules a failing BI. The BI is the gold standard.

EXAM TIP: Three monitoring methods every cycle: physical (gauges and printout), chemical (color change), biological (live spores).

5. Sterile Storage Numbers

Packaging must let the sterilant in, keep microbes out, and open aseptically. Sterility is EVENT-related, never time-related.

Storage targets

- **Temperature:** 64 to 75 F.
- **Humidity:** Controlled, per facility policy and IFU.
- **Off the floor:** Never store sterile items on the floor.
- **18 inches:** Below the ceiling (fire sprinkler clearance).
- **2 inches:** Away from exterior walls (condensation risk).

Wrap and pouch rules

- **SMS nonwoven wrap:** Spunbond, meltblown, spunbond. Outer layers give strength, meltblown middle gives the microbial barrier. Single-use, then discarded.
- **Woven muslin:** Largely historical. Minimum 140 threads per inch if still used.
- **Two layers:** Sequential (two separate sheets) or simultaneous (two bonded sheets). Both are acceptable.
- **Folds:** Envelope fold and square fold.
- **Peel pouches:** Paper-plastic for steam and EtO. Tyvek-plastic for low-temperature methods.

EXAM TIP: Sterility is event-related: a package stays sterile until an event (tear, moisture, crushed) compromises it, not until a date passes.

6. IUSS Rules (Formerly Flash)

Immediate-use steam sterilization: unwrapped, for immediate use, emergencies ONLY. The name was changed to kill the fast-and-casual mindset.

When IUSS is acceptable

- **Emergency only:** An unexpected need arises during a patient procedure.
- **No replacement:** No properly processed sterile replacement exists.
- **Immediate use:** The item goes straight from the sterilizer to that specific procedure.
- **Classic exam scenario:** An instrument drops on the floor mid-procedure and no sterile backup exists.

When IUSS is NEVER acceptable

- **Busy schedule or staff convenience:** Never a fix for poor planning.
- **Saving turnover time:** Never a routine shortcut.
- **Poor inventory planning:** Fix the inventory, not the process.
- **"We always do it this way":** Routine IUSS is the violation the exam wants you to spot.

Non-negotiable conditions

- **Cleaned first:** Full cleaning and decontamination before the cycle, even in an emergency.
- **Per IFU:** Processed per the device and sterilizer instructions.
- **Direct transfer:** Carried directly from sterilizer to point of use.
- **Never stored:** Used right away, never shelved.
- **Documented:** Every IUSS cycle is recorded.

EXAM TIP: If the question stem treats IUSS as a routine shortcut, the correct answer is that it should not be done.

7. Exam-Day Checklist

Walk in calm and finish strong. Nothing on exam day should be a surprise.

Before test day

- **Prometric:** HSPA exams run through Prometric centers, year-round. After HSPA approves your application (allow 3 to 4 weeks), schedule your own appointment.
- **Schedule early:** Book as far ahead as possible for your preferred date and location. Save your confirmation.
- **Provisional candidates:** Document your 400 hours of hands-on experience within 6 months of passing.

What to bring and expect

- **Arrive early:** Bring the ID Prometric requires and check in without rushing.
- **Secure room:** No phones, no notes, no study materials. Quiet and monitored.
- **Tutorial first:** Take the pre-exam tutorial seriously and learn the flagging and review features. You will need them.

Pacing: 125 scored questions

- **Know your budget:** Divide total time by 125 before you sit down.
- **Answer everything:** Unanswered questions cannot earn points.
- **Read twice:** Watch for absolutes like always and never, which are rarely correct.
- **Flag, move, return:** Any question over budget gets flagged. Return in the review pass at the end.

Mindset

- **Unfamiliar questions are by design:** Every candidate gets some. Stay on your plan.
- **Slow is smooth:** Nervous rushing is the top reason prepared candidates miss questions they knew.