

Medicine

Spaced Repetition · The Medic Method

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26 entries

Memory leaks. Within a day of meeting new material most of it is gone, and re-reading the same page back-to-back barely slows the loss. Spaced repetition beats this by deliberately spreading your reviews out over days and weeks, catching each fact just before you forget it so that it sticks for the exam and beyond.

What it is

The core idea	Spaced repetition (also called distributed practice) means reviewing the same material on several separate occasions with gaps in between, rather than studying it all in one sitting. The total study time can be identical; only the spacing changes, yet the spaced version produces far more durable memory.
Spacing vs massing	Cramming everything into one block is 'massed' practice. Splitting the same effort across day 1, day 3 and day 7 is 'spaced' practice. The advantage of spacing over massing is one of the most reliable findings in the science of learning.
Not just for facts	It works for vocabulary, definitions, diagrams, formulae, named examples and quotation banks, and it pairs naturally with active recall (testing yourself) rather than passive re-reading.

The evidence

Ebbinghaus (1885): the forgetting curve	Hermann Ebbinghaus, testing his own memory, charted how quickly newly learned material decays: the drop is steep at first and then levels off. He also showed that relearning is faster the second time, which is exactly what scheduled reviews exploit.
Cepeda et al. (2006): the meta-analysis	A synthesis in Psychological Bulletin pooled 317 experiments and 839 separate comparisons. Spacing reliably beat massing, and the benefit grew as the gap between sessions increased, up to a point that depends on how long you need to remember the material.
Cepeda et al. (2008): the optimal gap scales	In a study of more than 1,350 learners, the best gap between reviews depended on the target retention interval. As a rough guide the ideal gap was around 10 to 20 percent of the time until the test, falling to about 5 percent for a one-year delay. Longer waits need longer gaps.
Bjork: desirable difficulties	Robert and Elizabeth Bjork's 'New Theory of Disuse' distinguishes storage strength from retrieval strength. Spacing makes recall feel harder in the moment, and that very effort is what cements the memory. They call these productive struggles 'desirable difficulties'.
Dunlosky et al. (2013): rated high utility	A review of ten common study techniques judged distributed practice to be one of only two strategies of HIGH utility, effective across ages, subjects and ability levels. Popular tactics such as highlighting and re-reading were rated LOW.

Why it works

Reviewing just before you forget	Each review is most powerful when it lands as the memory is starting to fade. Recalling it then resets the forgetting curve, and crucially the new curve falls more slowly, so the memory now lasts longer than it did last time.
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Storage strength vs retrieval strength	Material you can read fluently has high retrieval strength but may have weak long-term storage. Letting a little forgetting happen before you review forces effortful retrieval, which is what builds the durable storage strength an exam rewards.
Massing fools you	Studying in one block feels productive because the material stays easy to recall while it is fresh in mind. That fluency is a trap: it inflates your confidence but does little for memory a week later, when it actually counts.
Varied contexts, stronger cues	Because spaced sessions happen on different days, in different moods and settings, the memory becomes linked to a wider set of retrieval cues. That makes it easier to access later in the unfamiliar setting of an exam hall.

How to run it

A simple starter schedule	When you first learn a topic, review it the next day, then after about 3 days, then 1 week, then 3 weeks, then a month. Each successful recall earns a longer gap before the next review.
Expanding intervals	Start with short gaps while the memory is fragile and lengthen them as it becomes secure. If you fail to recall something, shorten the gap again before stretching it back out. The gaps expand as your mastery grows.
The Leitner box system	A paper method: sort flashcards into a few boxes. A card you get right moves up to a box reviewed less often; a card you get wrong drops back to the daily box. Difficult cards are seen frequently and easy ones rarely, all without an app.
Anki and digital tools	Apps such as Anki automate the scheduling, showing each card at a calculated interval based on how well you knew it. Keep cards short and atomic, one idea each, and answer honestly so the algorithm spaces them correctly.
Spread learning across the term	Plan revision over weeks, not the final fortnight. A topic met in week one should reappear briefly in weeks two, four and eight. Little and often, across the whole course, beats a marathon the night before.

Common mistakes

Cramming the night before	Massing all your study into one late session is the single most common error. It may scrape a pass tomorrow but the material fades fast, which is fatal for cumulative subjects where everything is examined together at the end.
Restarting the schedule	Re-reading a whole chapter from scratch each time wastes the spacing. The point is to test yourself on what you already met and review only what you are starting to lose, not to begin again every session.
Gaps that are too short	Reviewing again an hour later, while the answer is still obvious, is barely better than massing. If recall feels effortless the gap was too short; a little difficulty is the signal that the spacing is doing its job.
Gaps that are too long	Leave it so long that the memory is completely gone and you are relearning from zero, which is slow. The aim is to review while the trace is faint but still recoverable, not after it has vanished entirely.
Mistaking recognition for recall	Nodding along to a worked example or a highlighted page feels like learning but only tests recognition. Cover the answer and retrieve it from memory; spacing works best when every review is a genuine test.

In a Nile lesson

Every weak topic gets a return date	When a student stumbles on a topic, we do not just reteach it and move on. We log it and schedule it to come back in a later lesson, timed to return just before it would naturally be forgotten.
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Starters that revisit old ground	Lessons open with a few quick retrieval questions drawn from topics covered weeks earlier. This bakes spaced review into the timetable so it happens automatically, without the student having to organise it.
A living map of mastery	We track which topics are secure and which are slipping, and we lengthen the gap on the strong ones while bringing the shaky ones back sooner. The schedule adapts to the individual rather than the textbook order.
Homework that spaces, not crams	Between lessons we set short, spaced practice on a mix of recent and older material rather than one long block on the latest topic. The aim is steady review across the term so knowledge is still there on exam day.