

SSDs can still fail even when showing 100% health: the real warning signs.

SSDs can 'die' even with 100% health. Don't just look at the wear percentage; pay attention to data errors, critical warnings, and SMART indicators to avoid data loss.

Today, SSDs are so durable that many people will never have to face the situation of a hard drive failing. But the downside is: when an SSD fails, it often 'dies silently,' and you only realize it when your data is lost.

Monitoring SSD health is a good way to detect risks early, but looking at just a percentage number isn't enough. If you want to protect your data, you need to understand which metrics are truly important.

Why can the 'SSD Health' index be misleading?

Unlike HDDs, SSDs use NAND flash memory, which has a finite lifespan. Each SSD has a TBW (terabytes written) limit, which is the total amount of data that can be written throughout its lifetime. When approaching or exceeding this limit, the drive's reliability may decrease, but some drives may still function well, or fail for entirely other reasons. In short: no one can predict what will happen to your SSD.

To avoid catastrophic data loss, many users employ tools like CrystalDiskInfo or the built-in Windows disk checker utility. The problem is that each tool monitors different metrics, and the 'health' percentage doesn't reflect the overall condition of the hard drive.



In reality, 'SSD health' isn't a standard number used by all software. Some applications consider it a measure of wear and tear, others calculate the number of spare blocks, and Windows sometimes simply reports 'everything is fine' without further explanation.

With NVMe SSDs, the health percentage is usually based only on SMART indicators like 'percentage used,' which is the level of use compared to the design lifespan. It only reflects wear and tear, not potential failures. An SSD might still show 95% health but has already started registering data errors or integrity issues, enough to cause it to fail unexpectedly.

These are the indicators that are truly worth paying attention to.

In fact, wear and tear is rarely the cause of failure for modern SSDs. Many drives are rated at several hundred, or even over 1,000 TBW. Unless you're writing hundreds of GB per day (for example, using it in a NAS), it's very difficult to reach this limit.

What usually 'kills' SSDs is errors.

The first thing to check is whether the drive is showing a **critical health warning**. In CrystalDiskInfo, this is a prominent warning under 'Health Status'. The health percentage is only for reference; a critical health warning is what needs immediate attention. Many experts believe that around 70% health is the point where you should start considering replacing your SSD.

Next is the **spare block** capacity – the reserve area of the SSD to replace faulty blocks. When the number of spare blocks decreases, the SSD will have increasing difficulty 'healing' itself from problems.

Finally, carefully examine metrics related to data errors such as media/data integrity errors, uncorrectable errors, error logs, or unsafe shutdowns. These metrics are usually found in the SMART table or the NVMe health section. If you see them increasing unusually, consider it an early warning sign.



How to check SSD health on Windows

The most common and easiest way is still to use **CrystalDiskInfo**. This free tool gives you a fairly comprehensive view, not just a single status update.

In addition to checking health, temperature, and warnings, you should also pay attention to information such as total written capacity and operating hours. These don't directly indicate an SSD is about to fail, but they help you understand how much the drive has been 'working'.

Next, scroll down the SMART panel to check for entries related to data integrity errors, critical warnings, and unsafe shutdowns. If there are no data integrity errors and the error log is almost empty, you can be somewhat reassured.

You can also check further using Windows PowerShell to get an overview of the status and indicators such as durability, temperature, and read/write errors – essentially asking for a 'second opinion' from the operating system.

When should you start worrying and thinking about replacing your SSD?

The most important question is: **how important do you consider your data to be?**

If you're not too concerned about the risk of data loss, you can continue using an older SSD. However, for most users, when the SSD starts to malfunction, shows significant wear and tear, or causes problems, replacing it is the safer option.

Symptoms such as frequent freezes, crashes, lagging, or unusually slow performance can all be warning signs. The SSD isn't always the culprit, but if it is, you risk losing all your data. In the case of reduced performance, you should also check if the drive is nearly full before jumping to conclusions.

The most important thing to remember is: SSD wear indicators are a planning tool, not a "warning button." They help you prepare for a replacement early. And above all, always back up your data – doing so will prevent any SSD issues from becoming a disaster.

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