Reasons Why a Water Heater Doesn't Make Enough Hot Water

Your [water heater](https://www.thespruce.com/best-water-heaters-4172821) is a workhorse appliance that works nearly constantly. Not only does every faucet in your house depend on the water heater, but so do appliances such as the clothes washer and dishwasher. Like any hardworking appliance, the water heater is subject to a variety of maintenance issues and common problems, but one of the most common complaints is that it doesn't produce enough hot water.

Fun Fact

The first residential hot water heater was made in England in 1868. It worked by flowing cold water through pipes exposed to a hot gas burner; the heated water would then flow into a sink or tub.

Here are some things to look for when your water heater doesn't provide enough hot water, with suggestions on how to address the problem.

Demand Is Too High

Perhaps the most common reason for an inadequate supply of hot water is that there are too many fixtures and appliances drawing hot water for the water heater to keep up with the demand. If the problem has just appeared, some reasons why your hot water supply might be inadequate include the following:

* Recent upgrading to a larger bathtub or spa-type tub may be requiring more hot water than your previous tub. Your water heater might not be up to the demand.
* A new shower head that features a higher flow or that has multiple sprayer heads may be calling for more hot water. Deluxe "luxury" showers may use considerably more water than simple single-head showers.
* A remodeling project that adds a new [bathroom](https://www.thespruce.com/improvements-for-next-bathroom-remodel-4008849) or larger kitchen can put a greater demand on the hot water heater.
* Additional household members can cause hot water demand to exceed capacity. Some families find, for example, that college students returning home for summer suddenly cause a hot water shortage.
* New large-capacity or additional appliances can also put excessive demand on a hot water heater. If you have just added a dishwasher in a rec-room bar or a new large-capacity washing machine, it should be no surprise if the water heater finds itself overtaxed.

Solutions to a Demand Problem

* Replacing your water heater with a larger capacity model. Water heaters are available in tank sizes ranging from 28 gallons to 100 gallons. Most experts suggest a 30-gallon tank as a minimum for one or two people, a 40-gallon tank for three or four people, and a 50-gallon or larger tank for five or more people. Be aware that gas water heaters recover faster than electric water heaters.
* Install a [tankless water heater](https://www.thespruce.com/tankless-water-heaters-1824903). Tankless water heaters heat water as it is needed, so you virtually never run out of hot water unless all appliances are drawing hot water at the same time. Tankless water heaters are available in both whole-house models as well as small point-of-use heaters that can be tucked beneath a sink cabinet.
* Create a usage schedule that spreads out the hot water demand. In large families, for example, staggering shower times and running clothes washers and dishwashers late at night can improve the availability of hot water.

Incoming Water Is Too Cold

Problem

In cold-climate areas, the incoming water supply can be very, very cold in the wintertime, which means your water heater will require considerably more time to heat the water. As a result, you may feel that you're not getting the same volume of hot water as before.

Solution

Increase the thermostat temperature setting on your water heater during the winter months. This will partially compensate for the colder water entering the tank at this time of year.

Reduced Incoming Water Pressure

Problem

It is the incoming cold water flow that pushes the hot water out to fixtures and appliances. If the water supply experiences a reduction in water pressure, this will also reduce the pressure at which hot water is forced out of the tank, making it seem like you don't have as much hot water.

Solution

Fixing [water pressure problems](https://www.thespruce.com/home-water-pressure-problems-2718730) can be difficult because there can be several causes. In some instances, old, corroded pipes may need to be replaced with new plumbing pipes. If your home has a water pressure regulator valve, this device may need adjustment or replacement.

Water Heater Thermostat Set Too Low

Problem

In the interest of energy savings and home safety, many people set the thermostat on the water heater at a fairly modest 120 F. This is good practice, but it also means that you may be running a shower or sink faucet at the full hot position in order to get the hot water you need. This can quickly empty a water heater during peak-use times.

Solution

Set the thermostat higher—at 140 F or higher. At this setting, getting comfortably warm water at a shower or faucet will involve mixing the hot and cold water flow, which means it will take longer to use up the hot water in the tank.

Faulty Thermostat

Problem

If you notice no increase in water temperature when you increase the setting on your water heater, it's possible that the thermostat is faulty. This is fairly common with electric water heaters, which have thermostats attached to both the upper and lower heating elements on the tank.

Solution

You should have the faulty thermostat replaced.

Faulty Electrical Heating Element

Problem

Electric water heaters have two heating elements mounted in the tank, and it is fairly common for them to wear out. Diagnosing a heating element is fairly easy. A constant supply of lukewarm water usually means a defective upper heating element, while a short-lived supply of fully hot water means that the lower heating element is probably defective.

Solution

Test and [replace a faulty element](https://www.thespruce.com/replace-the-heating-element-water-heater-1824886). This is a fairly easy DIY project.

Sediment Buildup in Tank

Problem

If rust, corrosion, and sediment build-up in the bottom of a water heater tank, the burner or heating elements will not heat the water as efficiently, making it harder to maintain a good supply of sufficiently hot water.

Solution

Prevention—in the form of yearly flushing of the water heater tank to remove any buildup of sediment and rust that collects in the bottom of the tank.

Distance to Water Heater Is Too Far

Problem

In homes where a bathroom is quite some distance away from the water heater, it can not only take quite a while for hot water to reach the shower and sink faucet, but the hot water supply may run out rather quickly. The reason for this is that a considerable amount of hot water is being used to heat up long runs of pipes running from the water heater to the faucets.

Solutions

There are several solutions to consider:

* Install a supplemental point-of-use water heat near the faucet. These appliances are essentially small electric tank water heaters installed in the vanity cabinet.
* Install an [instant hot water recirculating pump](https://www.thespruce.com/hot-water-recirculation-pump-installation-2719056) to keep water in the hot water lines constantly warm.
* Insulate the [hot water pipes](https://www.thespruce.com/water-pipe-insulation-2718695) running from the water heater to the distant faucet. This will prevent heat from being lost as it radiates off the pipes.

Faulty Dip Tube

Problem

Hot water heaters are designed so that cold water enters the tank through a dip tube that runs from top cold water inlet down through the inside of the tank, delivering the cold water to the bottom. This ensures that the hottest water is at the top of the tank, near the hot water outlet pipe.

If the dip tube becomes disconnected or broken, the cold water may enter the tank at the top, where it immediately dilutes the hot water. This results in lukewarm water and an apparent reduction in the volume of hot water.

Solution

Disconnect the cold water inlet on the water heater, remove the old dip tube, and install a new dip tube. The part is inexpensive, and replacement is an easy DIY project.

Gas Burner Is Dirty or Faulty

Problem

A gas water heater cannot heat effectively if the burner is dirty or not functioning properly. The gas flame at the burner should burn steadily with a bright blue flame. If the flame is irregular or yellow in color, it will not be as hot and won't heat up the water in the tank as effectively.

Solution

Service the gas burner, which usually means cleaning the jets so the gas can flow freely. If the burner is cracked or badly corroded, it should be replaced.

Water Heater Is Worn Out

Problem

The average lifespan of a water heater is 8 to 12 years, and no matter how well you maintain it, eventually sediment will build up, affecting the efficiency of the appliance and reducing the available volume for hot water. If your water heater is at least 10 years old, efforts to correct a diminishing supply of hot water may be futile.

Solution

An old water heater needs to be [replaced](https://www.thespruce.com/replacing-a-water-heater-1824920). When choosing a new water heater, make sure to choose a model with a tank size large enough for your needs. And now might be a time to consider a state-of-the-art tankless water heater.

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