

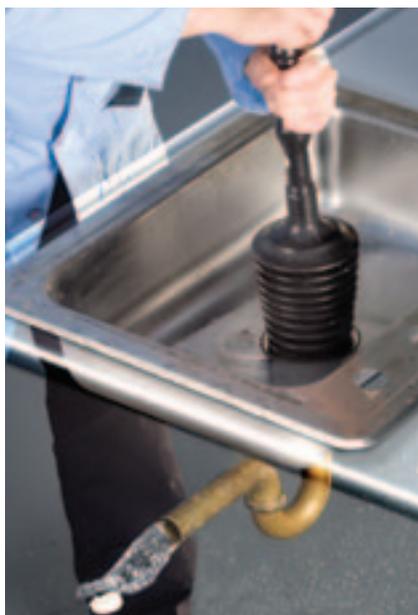
DRAIN CLEANERS

Take the plunger

Chemical drain cleaners are among the most dangerous household products—hardly a shocker, since these lye-based formulas are meant to dissolve plugs of grease, soap, hair, and ground-up food. Yet most don't clear undersink clogs as well as old-fashioned mechanical methods, including the humble plunger.

Another surprise: Chemical products labeled “heavy duty” or “professional strength” often proved less effective than their regular-strength counterparts in clearing kitchen clogs made of grease and food, and bathroom clogs of soap, toothpaste, and hair. And two foaming chemicals, from Drano and Liquid-Plumr, tanked altogether in our tests.

Crystals, another type of chemical drain cleaner, attacked clogs with a fury. But if the crystals are exposed to aluminum, a common material in some older sink trim, they can generate a choking cloud of lye-laden gas. Plus, mixing these products with different chemical drain cleaners or with common household cleaners, especially those that contain



MAIN SQUEEZE In our tests, the Master Plunger WP500, \$6, effectively forced out clogs and is among the better alternatives to chemicals.

ammonia, can cause the mixture to burst out of the drain. (See Safety Wise, on the facing page.) And if you accidentally pour too much of one product, Roebic Heavy Duty Crystal Drain Cleaner, down the drain, it can turn into a solid, stonelike

block that's almost impossible to remove. Given these potential dangers, we don't recommend using them.

Biological cleaners, such as Citra-Drain and Zep, use enzymes or bacteria to chew through clogs. Besides posing less of a health risk to humans, biologicals are less likely to harm septic systems because they don't kill beneficial bacteria. But they're wimpy when it comes to quickly removing clogs. However, they should be useful at keeping drains free of organic material once clogs have been cleared.

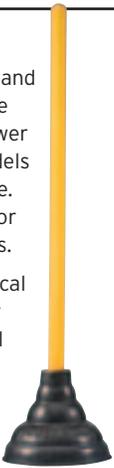
HOW TO CHOOSE

Mechanical drain cleaners are almost universally safe, effective, fast-acting, inexpensive, and environmentally friendly. Our advice is to invest \$75 or so assembling a clog-clearing kit with one each of the mechanical cleaners listed in First Things First, below, so you're never forced to resort to a bottle of chemical goop purchased in a panic from the corner store.

If the sink backs up quickly. Chances are the clog is just below the drain or in the

First things first Try mechanical methods first, then biological ones. Use chemicals only as a last resort.

MECHANICALS Safe, effective, fast, and reusable, but you need to seal off the overflow drain.

<p>Plungers</p> <p>Best for pushing and pulling clogs loose on the cheap. Newer bellows-style models are more effective. Won't mar metal or porcelain surfaces.</p> <p>But require physical strength and may be difficult to seal against some drains.</p> <p>Price \$5 to \$8.</p> 	<p>Gas-powered devices</p> <p>Best for blowing plugs of built-up food particles down the line with a burst of compressed gas.</p> <p>But mating the cap to the drain can be tricky and may require an adapter. Devices have a tendency to splash back. Can be used only a limited number of times before a replacement is required.</p> <p>Price \$5 to \$30.</p> 	<p>Water-powered devices</p> <p>Best for dislodging stubborn clogs located far down the line. The balloon-like body wedges into place inside a pipe, then floods it with water, building pressure until the clog is freed.</p> <p>But must be connected to a hose, which may be inconvenient, or used with a faucet adapter.</p> <p>Price \$9 to \$20.</p> 	<p>Snakes (augers)</p> <p>Best for penetrating clogs. Short, spiny models fish hair from just below a sink's strainer; longer metal versions can reach into the main drain. Auto-feed models are more expensive but easier to use.</p> <p>But some have limited range and require the removal of the sink trap.</p> <p>Price \$3 to \$130.</p> 
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WHEN THE SOLUTION IS THE PROBLEM

"Chemical drain cleaners are dangerous in so many ways," says Melisa W. Lai, M.D., a toxicologist at the American Association of Poison Control Centers. "If you swallow some, not only can it burn the esophagus, but it can keep churning through to the windpipe, even the heart."

This effect, called liquefactive necrosis, might be familiar to anyone who has spilled bleach on his fingers and felt the tips become slippery. "That's actually the skin cells melting and dying," Lai says. "And household bleach is a lot less caustic and concentrated than most chemical drain cleaners."

Accidents can happen more easily than you think: Use a plunger after chemical drain cleaners and you can splash the chemicals sitting in the clogged sink or drain into your eyes or onto your skin.

If this happens, flush eyes and skin with cool water for at least 10 minutes. Meanwhile, call the nationwide poison-control hotline, 800-222-1222. An operator will tell you what else to do and will direct you to the nearest emergency facility. If you've swallowed cleaner, Lai does not necessarily advise giving food or liquids like water or milk, despite advice to the contrary on some product labels—such items can be coughed back up, leading to additional burning and choking.

If you resort to chemical products, read and follow the manufacturer's use instructions and these safety tips:

- Gather all materials, including drain cleaner, tools, measuring devices, and protective gear, before you start.
- Wear rubber gloves, protective clothing, and splashproof eyewear. Remove contact lenses, which can trap splashed chemicals in the eyes.
- Open all the windows in the room to increase ventilation and disperse noxious fumes. Leave the room while the chemicals do their work.
- Never mix one drain cleaner with another or with cleaning products.
- Recap and dispose of unused portions in the original container with the child-safe cap secured. Do not store leftovers and do not reuse empty containers.



trap. In the kitchen, first pour boiling water down the drain to help melt away greasy blockages. Just take care to pour the hot liquid right into the drain or you risk cracking a porcelain sink. In the bathroom, hair is often the culprit. One product we tested, a 2-foot-long, toothed plastic strip called the Zip-It (\$3), doesn't have the range to snag deep clogs, but it's perfect for fishing things like hair and dental floss from the drain just past where fingers can easily reach.

Prepare to plunge. Before employing a plunger, stuff a wet rag into any overflow drains and, if you have a double basin, neighboring sink drains. That way the pressure will be directed at the clog. Then fill the sink to above the lip of the plunger, so that you'll force water, not air, at the clog. Finally, vigorously push and pull the plunger until the clog is forced free.

Use force on stubborn clogs. If the plunger doesn't do it, or if using a plunger is too taxing, consider one of the products that use compressed gas or water pressure to pop clogs free. As with plungers, it's critical that the mouth of the device be sealed against the mouth of the drain so that pressure is directed toward the clog and not back out toward you.

If multiple fixtures are clogged. The problem likely lies farther down the line, beyond the sink trap. Chemical drain cleaners typically won't reach deep clogs in sufficient quantity to dissolve them. Instead thread a snake, also known as an auger, a long, steel, corkscrew-tipped

cable, through the drain to bust through blockages, following the manufacturer's directions. Because many sinks have a permanent strainer holder installed in the drain hole, you might need to unscrew and remove the J-shaped trap underneath the sink to get access to the drain pipe. Some traps have a square or hexagonal-headed clean-out plug that makes access a little easier. Either way, have a bucket on hand to catch the water and gunk that will drain from the sink. Ridgid's Auto-Spin powered snake feeds and withdraws the cable at the touch of a foot pedal, leaving one hand free to, say, hold a flashlight. But it's the priciest tool we tested.

Call a pro when mechanicals fail. If plunger thrusts, bursts of gas and water, and several twists of a snake don't clear things up, the clog is probably deep in your main drain or in the connection to the street. Contact a licensed plumber or professional drain-cleaning service. Be sure to tell them what you've already tried, and if you've used chemical cleaners.

Keep drains clear. To maintain a free-flowing kitchen drain, don't pour cooking oil, grease, or other fats down it. Transfer them to a jar, refrigerate the jar to harden the grease, and toss it all out with the trash. Don't dump clumping foodstuffs like rice and coffee grounds in drains, either. Outfit all sinks with strainers to catch food, fibers, and hair, and clean them out often. Finally, flush the drain regularly with a few gallons of boiling water, which can melt away built-up grease and soap.

Or better yet, call a plumber.

BIOLOGICALS Simple, safe, but not so effective.

CHEMICALS All are hazardous, most are not so effective.

Enzymes

Best for clearing organic-based clogs like grease, hair, and soap without using toxic chemicals. Won't damage septic systems.

But can take 24 hours or more to work and are ineffective on mineral deposits.

Price \$5 to \$9.



Liquids, gels, and foams

Best for improving minor clogs. Easy to use.

But are only moderately effective at best. Require 30 minutes or more to work. Can damage septic systems and discolor surfaces.

Price \$3 to \$7.



Crystals

Best for effectively clearing undersink clogs chemically.

But extremely hazardous. Need careful mixing. Generate heat and can produce caustic gas, especially in the presence of aluminum. Can damage garbage disposers and septic systems and discolor surfaces.

Price \$5 to \$8.



Ratings drain cleaners

CR Quick Recommendations

Chances are your kitchen or bath sink will clog up, probably at an inconvenient moment. Clearing them is big business — about \$150 million is spent a year on drain cleaners alone. And much of that money goes right down the drain.

We tested mechanical, biological, and chemical drain cleaners in pipes we clogged with measured amounts of grease and glop. We cannot recommend chemical drain cleaners. They are simply too hazardous, and most don't work very well. And the ones that performed better tended to be the most dangerous. Mechanical methods are much safer, and they work better and more consistently.

Biological methods use enzymes and bacteria that feed on organic matter in clogs to clear drains. But they require time to work, and cleaning products with bleach can destroy their bacteria and enzymes, and stunt their effectiveness.

The **Ratings** rank models by overall performance. **Quick Picks** combines performance and value.

QUICK PICKS

Mechanical cleaners; best for clearing most clogs:

- 1 **Drain King** \$20
- 2 **CLR** \$20
- 6 **Master Plunger** \$6

All three are worth having on hand. The reusable Drain King uses water pressure to flush tough clogs out quickly, regardless of how far they are from the drain, but you need to run a garden hose to the device (or use a faucet adapter) to "power" it. The CLR is less cumbersome and can be used up to 15 times. Simply push the can, cap-side down, onto the drain opening to release a measure of pressurized gas that blasts the clog clear. The Master Plunger is the cheapest and simplest to use, but may not work on deep or stubborn clogs. It also requires some strength and coordination. All require you to stop up sink or tub overflow drains with rags.

For more information

Free: To see these mechanical drain cleaners in action and learn how to use them, go to www.ConsumerReports.org/draincleaners.

• **Availability** Most models at stores through June 2007.



Within types, in performance order. **Blue** key numbers indicate Quick Picks. Models with equal scores are listed alphabetically.

Key number	Brand and model	Type	Price	Overall score	Test results
				0 P F G VG E 100	Clearing clogs Ease of using safely
MECHANICAL <i>Safe, effective, and fast.</i>					
1	Drain King VIP1	water pressure	\$20	97	• •
2	CLR Power Plumber Pressurized Drain Opener Plunger Kit	compressed gas	20	93	• •
3	Ridgid Auto-Spin	powered snake	130	89	• •
4	Kleer Drain MAG 100	compressed gas	30	85	• •
5	Brass Craft Drain Cleaning Bladder BC00331	water pressure	9	80	• •
6	Master Plunger MP500 All Purpose Plunger	plunger	6	80	• •
7	Ridgid Kwik-Spin	snake	26	77	• •
8	Liquid-Plumr Power Jet	compressed gas and liquid	5	71	• •
9	Cobra Zip-It	snake	3	45	• •
BIOLOGICAL/ENZYME <i>Relatively safe, but slower and less effective.</i>					
10	Citra-Drain Natural Enzymatics	enzymes	5	55	○ ○
11	Zep Commercial Drain Care Best Professional Build-Up Remover (Home Depot) [†]	enzymes	9	52	○ ○
12	Earth Friendly Earth Enzymes Drain Opener	enzymes	9	47	○ ○
CHEMICAL <i>All can be hazardous; use as a last resort.</i>					
13	Drain Out Crystal Clog Remover	crystals	5	65	• •
14	Drano Kitchen Crystals Clog Remover	crystals	7	64	• •
15	Roebic Heavy Duty Crystal Drain Opener	crystals	8	60	• •
16	Liquid-Plumr Regular Strength Clog Remover	liquid	4	57	• •
17	Drano Max Gel Clog Remover	gel	5	52	○ •
18	Liquid-Plumr Professional Strength Gel Clog Remover	gel	7	49	○ •
19	Liquid-Plumr Professional Strength Kitchen Clog Remover	liquid	4	46	○ •
20	America's Choice Professional Drain Opener	liquid	3	45	○ •
21	Instant Power Heavy Duty Drain Opener	liquid	5	45	○ •
22	Roto Rooter Clog Remover	liquid	7	45	○ •
23	Pequa Heavy Duty Drain Opener	liquid	5	44	○ •
24	Drano Liquid Clog Remover	liquid	3	40	○ •
25	Pathmark Professional Strength Liquid Drain Opener	liquid	4	38	○ •
26	Liquid-Plumr Foaming Pipe Snake Clog Remover	foam	4	30	• •
27	Drano Dual Force Foamer Clog Remover	foam	4	29	• •

[†] Sold as a drain maintenance product, not a clog remover.

Guide to the Ratings

Overall score is based mainly on clearing clogs, but also includes ease of using safely. **Type** is the kind of drain-cleaning product. **Clearing clogs** is based on how consistently and thoroughly the product cleared and/or improved undersink kitchen and bathroom clogs, including those made up of mixtures of lard and rice, and toothpaste, soap, and hair. **Ease of using safely** is based on our judgment of how easily the product could be used safely as well as the potential for personal injury or property damage resulting from misuse. **Price** is approximate retail.