

How Much Water Does Pasta Really Need?

 [nytimes.com/2009/02/25/dining/25curi.html](https://www.nytimes.com/2009/02/25/dining/25curi.html)

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February 24,
2009

SOME time ago, as I emptied a big pot of pasta water into the sink and waited for the fog to lift from my glasses, a simple question occurred to me. Why boil so much more water than pasta actually absorbs, only to pour it down the drain? Couldn't we cook pasta just as well with much less water and energy? Another question quickly followed: if we could, what would the defenders of Italian tradition say?

After some experiments, I've found that we can indeed make pasta in just a few cups of water and save a good deal of energy. Not that much in your kitchen or mine just the amount needed to keep a burner on high for a few more minutes. But Americans cook something like a billion pounds of pasta a year, so those minutes could add up.

My rough figuring indicates an energy savings at the stove top of several trillion B.T.U.s. At the power plant, that would mean saving 250,000 to 500,000 barrels of oil, or \$10 million to \$20 million at current prices. Significant numbers, though these days they sound like small drops in a very large pot.

The standard method for cooking pasta, found in Italian cookbooks and on pasta packages, is to heat to a rolling boil 4 to 6 quarts of well-salted water per pound of pasta. The usual rationales are that abundant water quickly recovers the boil when the pasta is added, gives the noodles room so that they don't stick to one another, and dilutes the starch they release, so they don't end up with a "gluey" surface.

To see which of these factors are really significant, I put a pound of spaghetti into a pot, added just 2 quarts of cold water and 2 teaspoons salt and turned on the heat. The water took about 8 minutes to reach the boil, during which I had to push the noodles around occasionally to keep them from sticking. They took another 10 minutes to cook through.

When I drained the pasta, it had the texture and saltiness I expected, seemed about as sticky as usual, and when tossed with a little oil, seemed perfectly normal.

So I tried reducing the water even further, to 1 1/2 quarts. I had to stir often because that's not quite enough to keep all the pasta immersed all the time, but again the spaghetti came out fine.

Why can pasta cook normally in a small volume of water that starts out cold? Because the noodles absorb water only very slowly at temperatures much below the boil, so little happens to them in the few minutes it takes for the water to heat up. And no matter how

starchy the cooking water is, the solid noodle surfaces themselves are starchier, and will be sticky until they're lubricated by sauce or oil.

I described my method in e-mail messages to two of this country's best-known advocates of Italian cuisine. Lidia Bastianich told me: "My grandmother would have thought of the idea surely as blasphemous. I think it is curious." And Marcella Hazan said, "I am a very curious person, and I'm glad people are exploring new ways." Both of them gave it a try.

Ms. Bastianich responded with a controlled experiment. She started spaghetti in pots of cold water and boiling water (4 quarts each instead of her usual 6) side by side and found the cold-water version lacking in the gradation of texture she looks for. As for the flavor, she said "I felt that the cold-water pasta had lost some of the nutty flavor of a good semolina pasta cooked properly."

Ms. Bastianich agreed that using less water is O.K. "Yes, I think it's doable to reduce the cooking water by one third," from 6 quarts per pound to 4. "But please 'butta la pasta' in boiling water."

Ms. Hazan tried starting a batch of shell pasta in a somewhat reduced amount of cold water, and found that it needed constant stirring to avoid sticking. "Maybe you save heat energy, but you also have to work a lot harder," she told me in a follow-up call. "It's not so convenient. I don't know if I would cook pasta this way."

Heartened by the experts' willingness to experiment, I went back to work, this time starting with hot water. I found that it's possible to butta la pasta in 1 1/2 or 2 quarts of boiling water without having the noodles stick. Short shapes just require occasional stirring. Long strands



and ribbons need a quick wetting with cold water just before they go into the pot, then frequent stirring for a minute or two.

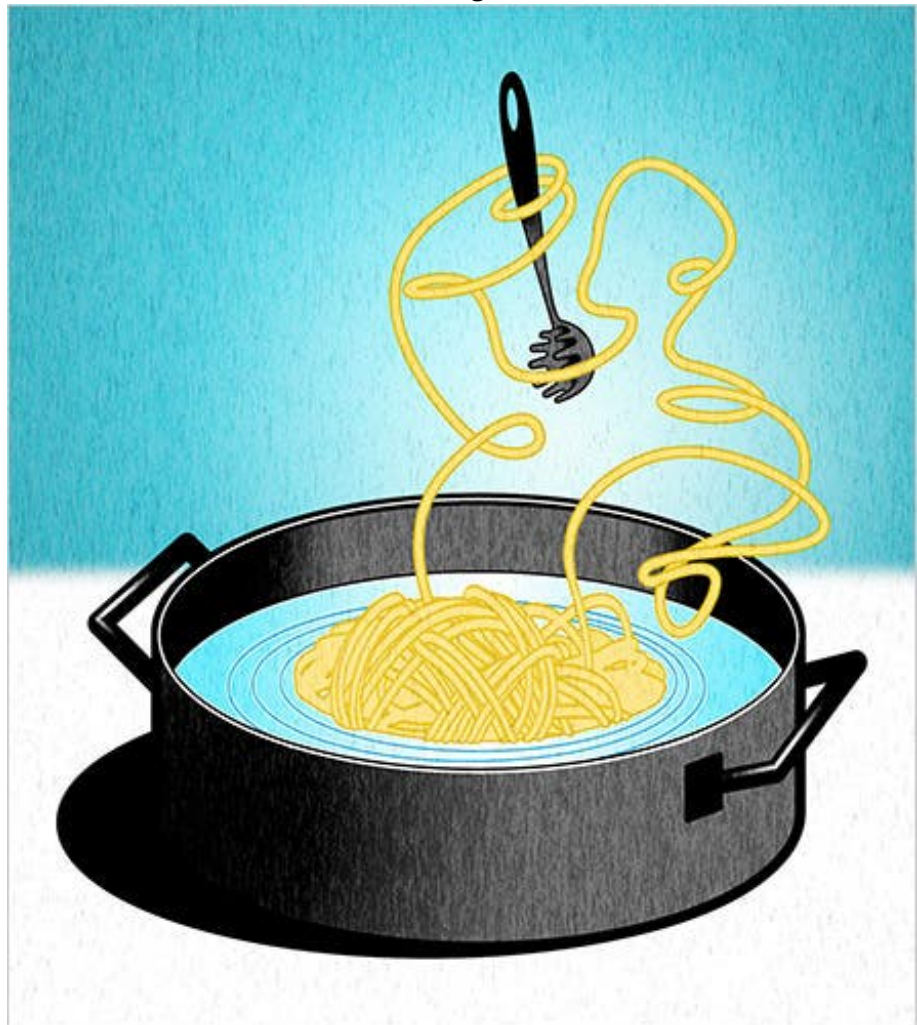
Except for capellini, which cooks too quickly, I find that both the cold and hot versions of the minimal-water method work well with the common shapes I've tried, with whole wheat pasta, and even fresh pasta, as long as any surface flour is rinsed off first.

I prefer starting with cold water, because the noodles don't stick together at all as they go into the pot, and because I don't notice a difference in flavor once they're drained and sauced. It's true, though, that no matter what temperature you start with, this method requires more attention. That's a disadvantage when you're cooking several things at once.

If you cook pasta often, try experimenting with different starting temperatures and amounts of water. You can even cook pasta in the manner of a risotto, adding the liquid in small doses and stirring constantly. Be sure to use a pot broad enough for the noodles to lie flat on the bottom, and to reduce the salt for smaller volumes of water.

There's one other dividend to cooking pasta in minimal water that I hadn't anticipated: the leftover pasta water. It's thick, but you can still easily ladle it out by tilting the pan. And it's very pleasant tasting: not too salty, lots of body, and lots of semolina flavor. Whole-wheat pasta water is surprisingly delicious.

Italian recipes often suggest adding pasta water to adjust the consistency of a sauce, but this thick water is almost a sauce in itself. When I anointed a batch of spaghetti with olive oil and then tossed it with a couple of ladles-full, the oil dispersed into tiny droplets in the



Credit...Thomas Fuchs

liquid, and the oily coating became an especially creamy one.

Restaurant cooks prize thick pasta water. In "Heat," his best-selling account of working in Mario Batali's restaurant Babbo, Bill Buford describes how in the course of an evening, water in the pasta cooker goes from clear to cloudy to muddy, a stage that is "yucky-sounding but wonderful," because the water "behaves like a sauce thickener, binding the elements and flavoring the pasta with the flavor of itself."

Mr. Buford suggests that the muddy pasta water should be bottled and sold, because home cooking never produces anything like it. Cooking one batch of pasta in minimal water can't smooth out the starch as completely or generate those long-cooked flavors. But it does make pasta water good enough to sip.