

# Why Eggs Are Getting Harder to Peel

- By Alexis Madrigal
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Consider the farm-fresh egg, the pristine symbol of the simple days of pre-industrial farming.

People love them, but there's a problem: They seem to be getting harder to peel. And though I've messily discovered this on my own, there's some science to back this idea up.

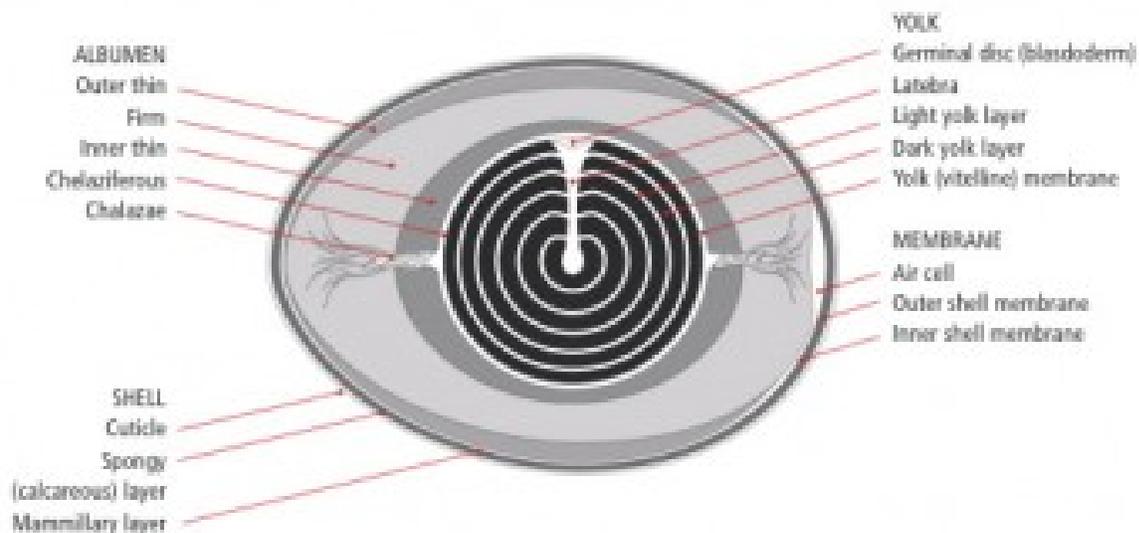
Here in food-crazed San Francisco, fresh eggs are everywhere. After purchasing some of these just-collected treasures for hard boiling, I found it nearly impossible to peel off their shells without pockmarking them. My once-beautiful eggs ended up with more craters than the moon.

It couldn't be my fault, I told myself. I'd been hard-boiling eggs for decades, most intensively during a six-month egg-salad kick in ninth grade. I got my technique down and everything.

What happened, then?

As an egg ages, it loses some carbon dioxide through tiny pores in the shell, making the egg white more basic. At the same time, it loses moisture, which increases the size of the "air cell" at the bottom of the shell, between the inner and outer membranes. The dynamics of this process are, in the words of a University of California, Davis agriculture publication, "**not completely understood**," but the combination of these changes makes an old egg a lot easier to peel than a one that is fresh out of the bird.

"The best guarantee of easy peeling is to use old eggs!" wrote Harold McGee, in his monster 800-page tome, *On Food and Cooking: The Science and Lore of the Kitchen*. "Difficult peeling is characteristic of fresh eggs with a relatively low albumen pH, which somehow causes the albumen to adhere to the inner shell membrane more strongly than it coheres to itself."





The USDA provides a complementary explanation more focused on the air cell, which you can see in the schematic, sitting between the outer and inner shell membranes.

“As the contents of the egg contracts and the air cell enlarges, the shell becomes easier to peel,” the USDA [Shell Eggs from Farm to Table](#) fact sheet states. “For this reason, older eggs make better candidates for hard cooking.”

McGee also suggests an easy cooking chemistry solution.

“If you end up with a carton of very fresh eggs and need to cook them right away, you can add a half teaspoon of baking soda to a quart of water to make the cooking water alkaline (though this intensifies the sulfury flavor),” he wrote.

While I’ve noticed the Peeling Problem most distinctly with superfresh farm eggs, the eggs you buy at the supermarket could be getting fresher too. Most American eggs are produced and distributed by agribusiness concerns like [Cal-Maine](#) and [Rose Acre](#), which each have more than 20 million hens cranking out eggs just for you.

Statistics on the time it takes for an egg to go from hen to supermarket have not been calculated, a USDA representative told [Wired.com](#), but there’s some reason to believe that new production techniques could be delivering eggs to markets faster.

A 1998 report by the agency found that big consolidated chicken egg facilities, which wash and package the eggs on-site instead of sending them to a separate processing location, could reduce the time from farm to store [from 100 hours to 53 hours](#). And, according to [Cal-Maine’s SEC filings](#), the industry continues to centralize, squeezing out the old facilities in favor of the new ones.

Eggs tend to sit on the retail shelf longer than they spend in processing and distribution, so the few extra days of freshness might not make the eggs as dramatically hard to peel as farm eggs.

But if you have any trouble, consider another techno fix: automatic [Eggstractor egg peeler](#), anyone?

*Image: 1) [YoAmes/Flickr](#). 2) [University of California, Davis](#).*