The Food Lab: How to Make Scallion Pancakes

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When I first learned how scallion pancakes are made, I was floored. *Whoah, ancient Chinese secret!* was what ran through my head. It took me several years to realize that conceptually, the method is almost identical to that of making puff pastry, croissants, or any number of laminated pastries, which makes scallion pancakes a *perfect* subject for exploring in this week's Food Lab.

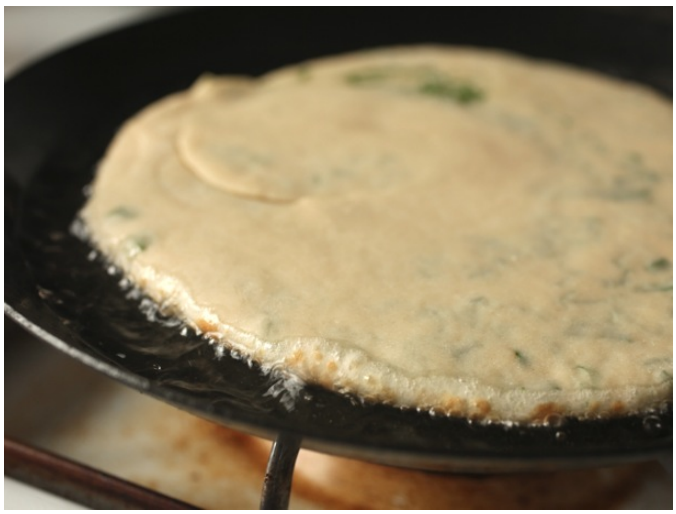
Scallion pancakes were one of the first things I ever taught myself how to cook. Or, I should say, I *thought* I taught myself how to cook them. I mean, **fried dough and scallions, right? How hard could it be?**

Of course, at the time I knew nothing of gluten development, laminate pastries or the like, and the dense, doughy blobs I was coming up with were certainly nowhere near the ideal flaky, crisp, light, multilayered affairs that the best Chinese restaurants serve. But due to an acute case of a horrible syndrome known in medical circles as *Imadethismyselfsoitmusttasteawesomosis*, I was totally oblivious to my quite obvious failure.

Here's what I did, in six easy steps:
1. Combine flour and water until workable dough is formed.
2. Knead a lot (I heard that kneading is good).
3. Add scallions.
4. Knead some more.
5. Roll out with a rolling pin, and fry.
6. Serve with tons of salt, vinegar, and soy sauce to distract from leaden texture.

Fast forward five or six years to me sitting in the living room watching an episode of Yan Can Cook, my mind rapidly being blown. This episode? **Scallion pancakes, the way they're *supposed* to be made**.

The process is honestly quite simple, and ingenious. It combines two unique features: hot water dough and lamination. Here's how they work.



Hot Water Dough

With most Western breads and pastries, cold or room temperature liquid is added to flour before kneading it. There are two major proteins in flour, *glutenin*, and *gliadin*. Here's the thing: they're kinda kinky (no, not in that way), and when

they get wet and are rubbed around through mechanical action (like kneading), they tend to stretch out and bind with other glutenin and gliadin molecules, forming the stretchy protein matrix known as gluten.

Gluten is what gives dough structure, and the more it's kneaded and worked, the tighter and more elastic it becomes. A ball of well-kneaded cold water dough will spring back if you press it and contract if you stretch it. This is why, for example, pizza dough is extremely hard to roll out until it's had at least a couple hours to rest and allow this gluten to relax. The level of chewiness and stretch you get from a cold water dough is directly related to how vigorously its kneaded, and how long it rests.

Hot water doughs—the type used to make scallion pancakes, dumpling wrappers, and several other Chinese pastries—**work a little differently.** By adding boiling water directly to flour, you actually end up not only denaturing the proteins, but smashing them into small pieces. Some degree of gluten can still form, but because cooked proteins aren't nearly as stretchy or clingy as raw ones, you won't get anywhere near the stretch or elasticity of a cold-water dough.

If airy, hole-filled bread is your goal, this is a bad thing. If, on the other hand, you're looking for tender dumpling wrappers or scallion pancakes with **just a bit of tug and chew,** that's *precisely* what you want.

The beauty of a hot water dough is that as you can see, it doesn't bounce back as much as a cold water dough does. This makes it extremely easy to work with and roll out. A positive boon when you've got 50 dumpling wrapper skins to form, or when you're making scallion pancakes. The texture can be described almost as a thick paste. Even better, because it's got so little gluten development, you can work with it almost straight out of the fridge, making it **easy to prepare your dough in the morning, throw it in the fridge,** come back just before dinner, and roll out as much or as little as you need for your meal.

The next interesting part of scallion pancakes is the rolling method.

Laminated Pastries

Though the most famous laminated pastry in the world is undoubtedly the croissant, I'd venture to guess that scallion pancakes are the most widely consumed (and best, because, as they say, how can a billion Chinese people be wrong?). **What exactly is a laminated pastry?** Well unlike bread leavened biologically with yeast or quick breads leavened chemically with baking soda or baking powder, a laminated dough is leavened via fat and vapor. It consists of two basic elements: **Layers of lean dough** separated by **layers of fat**.

The lean dough can be either completely unleavened (like with puff pastry, scallion pancakes, phyllo, or pate a bric), leavened with yeast (like croissants and Danish), or leavened with baking powder (some types of flaky, layered

biscuits), each one giving you a slightly different end result. Likewise, the fat layers can be any number of fats, such as olive oil (for certain phyllo recipes), butter (for puff pastry), or, for the case of scallion pancakes, sesame seed oil.

The idea is that by building up **layer upon layer of microscopically thin layers of pastry and separating them with equally thin layers of fat,** as the stuff cooks, water vapor from the pastry expands, causing the layers to separate slightly. It's this separating that creates the flaky, tender structure of perfect laminate pastry.

With some laminate pastries, these layers are created manually. Phyllo, for example, is built up one layer at a time, the cook manually brushing butter or oil onto each sheet before laying on the next. It's a relatively easy, but time-consuming process. Puff pastry, on the other hand, uses the power of mathematics to very quickly build up hundreds, or even thousands of layers. Here's how it works.

A thin, even slab of butter is placed on top of a layer of dough, which is then folded over the butter to completely enclose it like an envelope. Next, the entire thing gets folded into thirds and then rolled out again into the same size and shape—where you once had one layer, now you've got three. Repeat this process again, and you're up to nine layers. Most puff pastry recipes recommend a minimum of four folding iterations, giving you a total of 81 layers.

you can fold up to eight times, which gets you a whopping 6,561 layers.

As the graph shows, the number of layers goes up exponentially as you repeat the process, though for practical purposes, eventually the flour layers break or get penetrated by the butter, which limits the number of iterations you can make. With extremely careful handling and a cold marble surface to work you, you can fold up to eight times, which gets you a whopping 6,561 layers. Imagine that!

Scallion pancakes are made by an entirely different method. Rather than folding over any over, the flat disks of dough are first brushed with sesame oil and sprinkled with scallions, then rolled up, jelly-roll style.

I counted the number of complete turns this process makes, and it ends up being around five or so, depending on how tightly you roll it (the photo of a ripped scallion pancake three images back shows these five layers). After rolling, this log gets spiraled up like a snake.

Finally, it gets flattened out one last time, this time with the **scallions tucked neatly inside.**

A quick fry in hot oil later, and you're done. Crispy, slightly chewy, flaky, and delicious.

how could I make this even crisper and flakier?

Of course, my immediate thought was: how could I make this even crisper and flakier? The obvious answer is: treat it like a puff pastry by repeating the process several times.

By repeating the process even once, you multiply the layers by a factor of five, bringing you up to a full 25 layers of scallion-packed, Chinese delight. The only problem is, it's very difficult to roll, twist, and flatten the dough once it's had the scallions spread inside it—even going through the process once is difficult. As you can see from the photo below, the scallions have a tendency to break out, destroying the thin, delicate layers of dough.

Luckily, the solution is pretty simple: **just form the layers *without* the scallions, then add the scallions right before the last iteration of rolling and twisting.** I tried taking the process to the extreme, repeating the rolling steps four times (to deliver a full 625 layers!), but it proved too much for the delicate hot-water dough to handle. Instead of maintaining discrete layers, it ended up turning into a solid, doughy mass. Two iterations is about as much as it can handle.

Frying

The only other thing left to mention is frying temperature. I tried frying scallion pancakes over multiple temperature ranges to figure out the ideal method to achieve a crisp crust and optimal layer expansion. I also tried using very little oil (1 tablespoon), and a whole lot of oil (up to 1/2 a cup—enough that the oil came over the top of the 'cake). In the end, I discovered that very high heat produces unevenly cooked pancakes. They blister and bubble rapidly, the thin bubbles cooking and burning long before other areas of the pancake even begin to take color or the interior begins to set.

That's not what you want.

On the other hand, keep the heat too low, and your pancake sits in there slowly soaking up oil until its totally saturated, turning heavy and greasy instead of light and crisp.

Moderate heat with a good amount of oil and constant swirling is the best way to get even browning and discrete, flaky layers.

And by the way—in case you're afraid we've blown all our Ancient Chinese Secrets in one go, don't worry—this post just marks the beginning of Chinese-American Appetizer week (followed closely by TikiWeeki). Stay tuned!

Check out the slideshow for a full step-by-step breakdown of the process, or proceed straight to the recipe here.