

The Problem with Roast Turkey

Roasting a whole turkey is a race to keep the white meat from drying out while the dark meat cooks through. So who says you have to roast it whole?

➤ BY J. KENJI ALT ◀

For most of us, juicy, perfectly cooked roast turkey shrouded in crisp, burnished skin is like a desert mirage: a beautiful idea, yes, but one that always seems just out of reach. Here's the crux of the problem: getting the dark meat up to temperature and the skin crisp without overcooking the white meat. Breast meat needs to reach about 160 degrees and not much more or its muscle proteins will tighten up, squeezing out juices. At the same time, dark meat must be cooked to 170 degrees. Another problem is that dark meat cooks especially slowly, particularly the thighs, which due to the anatomy of a turkey are shielded from direct oven heat.

Enter two safeguards we've long advocated in the test kitchen: salting the turkey or brining it in saltwater. Both measures change the structure of the bird's muscles, allowing it to retain more moisture, especially at the exterior of the breast, the area most prone to overcooking. But neither measure is foolproof, and each takes the better part of a day. I wanted to cut out at least one kitchen task this Thanksgiving and skip that extra step. My goal was no less than the perfect turkey recipe, an approach that would get my fowl from supermarket to table in just a few hours, with meat as moist as prime rib and crisp, crackling skin. And since this would be the ideal recipe, I wanted to end up with great and easy gravy, too.

Taking Turkey's Temperature

To find out exactly how much of the turkey was hitting the 160-degree mark, I roasted a turkey using our standard method (start in a 400-degree oven

SHOPPING: Turkey Parts

Most supermarkets carry whole bone-in turkey breasts as well as leg quarters and individually packaged thighs and drumsticks. Try to avoid breasts that have been injected with a saline solution (often called "self-basters"), as we find it masks the natural flavor of the turkey. Also, ignore any pop-up timer that may come with the breast; the meat will be long overcooked by the time the popper pops.



Roasting turkey parts helps avoid the need for a brine.

breast-down and finish breast-up at 325 degrees). I took the temperature of the breast meat at ¼-inch intervals all the way from the coolest point (which registered 160 degrees) to the very exterior. This test showed that more than 50 percent of the turkey breast was reaching temperatures above 180 degrees, with some parts reaching nearly 200 degrees. No wonder brining is usually necessary to ensure meat that isn't completely dried out!

This problem was nearly identical to a dilemma I had encountered last year when developing a recipe for thick-cut steaks (May/June 2007), when I found that high-heat cooking caused the outer layers to overcook. The solution? Lower the heat. I baked the steaks in a gentle 275-degree oven before finishing them in a hot pan, resulting in perfectly and evenly cooked meat. Maybe, I reasoned, a slow-roasted turkey might also be the key to juicy meat.

I roasted my next turkey at 275 degrees, again taking its temperature at ¼-inch intervals once the center had reached 160 degrees. This time, the majority of the meat stayed reasonably close to the 160-degree mark, with only the outermost layers reaching between 170 and 180 degrees—a marked improvement that

was verified by correspondingly juicier breast meat (see "Don't Leave Your Turkey High and Dry" on page 11). But three problems had emerged. The most obvious was the pale and flabby skin, which failed to brown at the lower temperature. Second was the extremely long cooking time (over five hours), which not only tied up the oven but left the meat in the 40 to 140-degree "danger zone" (the range at which bacteria flourish) for too long. Finally, with the lower temperature, while the breast meat stayed closer to 160 degrees, so, unfortunately, did the legs and thighs. By the time the breast was done cooking, the thighs were still a disquieting pale pink.

Separation Anxiety

I knew from past chicken recipes that spreading the legs out from the breast helps them to cook faster. Could separating them completely help even more? Even the most sentimental cook would surely give up their Norman Rockwell dream of a whole golden-brown bird emerging from the oven in exchange for the juiciest turkey with the simplest preparation.

Rather than go through the hassle of breaking down a whole turkey, I bought a turkey breast along with two leg quarters (thighs and drumsticks). I roasted them elevated on a rack over a baking sheet to promote air circulation. This time, after just under three hours in the oven, the breast had reached 160 degrees. And without the insulating effect of the turkey's backbone and breast meat, the thighs and drumsticks serendipitously reached 175 degrees just as the breast finished cooking! Cutting into the breast revealed tender, juicy meat.

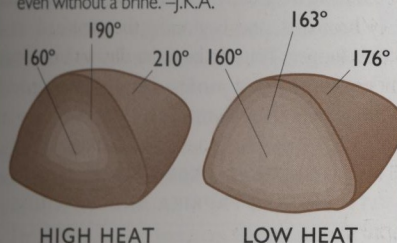
The only remaining problem was the skin. Most turkey recipes achieve crisp skin by starting the bird in a hot oven to brown it, then lowering the heat to finish cooking. But a higher starting temperature meant a higher oven temperature the whole way through, which led to dried-out meat. Increasing the heat near the end seemed more promising, but ultimately proved untenable; leaving the turkey in the oven as it heated up slowly also caused it to overcook. But what if I allowed the turkey to cool before popping it back in the oven to crisp the skin? I roasted more parts, this time removing them from the oven before raising the temperature as high as it would go—500 degrees. I allowed the turkey to rest for a full half hour until the temperature of the meat had dropped to around 130 degrees. After the turkey was in the oven for 15 minutes, I hesitantly poked my instant-read thermometer into the skin, which made an encouraging crack. The

SCIENCE:

Don't Leave Your Turkey High and Dry

EXPERIMENT: We roasted two non-brined turkeys, one using our standard high-heat approach (start in a 400-degree oven and finish at 325 degrees), the other roasted at 275 degrees the entire time. Once the center of each breast hit 160 degrees (the ideal temperature for moist, tender white meat), we recorded its temperature at ¼-inch intervals to the very exterior.

RESULTS: The outermost layers of the high-heat breast topped a moisture-obliterating 210 degrees. The exterior of the slow-roasted breast reached a much more moderate 176 degrees—proving that if you can roast at low heat, the meat will still be moist, even without a brine. —J.K.A.



thermometer revealed what one taste soon confirmed—the turkey was perfectly cooked from center to edge and surrounded by flawlessly rendered, crisp skin.

The Gravy Train

My remaining task was to find a simple way to create rich gravy. For a foundation, I placed a mixture of carrots, celery, onions, and flavorings under the turkey with some chicken broth. After a couple hours in the oven, the savory roasted vegetables were further seasoned by turkey drippings. Once the meat was cooked (but before crisping the skin), I strained the liquid and added more canned broth. The turkey's resting period gave me plenty of time to cook up a dark golden roux from flour and butter that I whisked into the broth. Barely 20 minutes later, the roux and broth had thickened into an intense gravy.

I'll still brine a turkey whenever I get the urge to provide a picture-perfect Thanksgiving centerpiece. But I have a feeling most times I won't even start worrying about the bird until the afternoon of the big day, knowing that I can easily produce juicy turkey with crisp skin—and a rich gravy—all in time for dinner.

SLOW-ROASTED TURKEY WITH GRAVY

SERVES 10 TO 12

Instead of drumsticks and thighs, you may use 2 whole leg quarters, 1½ to 2 pounds each. The recipe will also work with turkey breast alone; in step 2, reduce the butter to 1½ tablespoons, the salt to 1½ teaspoons, and the pepper to 1 teaspoon. If you are roasting kosher or self-basting turkey parts, season the turkey with only 1½ teaspoons salt.

Turkey

- 3 medium onions, chopped medium
- 3 medium celery ribs, chopped medium
- 2 medium carrots, peeled and chopped medium
- 5 sprigs fresh thyme
- 5 medium garlic cloves, peeled and halved
- 1 cup low-sodium chicken broth
- 1 whole bone-in, skin-on turkey breast (5 to 7 pounds), trimmed of excess fat and patted dry with paper towels (see note)
- 4 pounds turkey drumsticks and thighs, trimmed of excess fat and patted dry with paper towels (see note)
- 3 tablespoons unsalted butter, melted
- 1 tablespoon table salt
- 2 teaspoons ground black pepper

Gravy

- 2 cups low-sodium chicken broth
- 3 tablespoons unsalted butter
- 3 tablespoons unbleached all-purpose flour
- 2 bay leaves
- Table salt and ground black pepper

1. **FOR THE TURKEY:** Adjust oven rack to lower-middle position and heat oven to 275 degrees. Arrange onions, celery, carrots, thyme, and garlic in

even layer on rimmed baking sheet. Pour broth into baking sheet. Place wire rack on top of vegetables (rack will rest on vegetables, not on bottom of baking sheet).

2. Brush turkey pieces on all sides with melted butter. Sprinkle salt and pepper evenly over turkey. Place breast skin-side down and drumsticks and thighs skin-side up on rack on vegetable-filled baking sheet, leaving at least ¼ inch between pieces.

3. Roast turkey pieces 1 hour. Using wads of paper towels, turn turkey breast skin-side up. Continue roasting until instant-read thermometer registers 160 degrees when inserted in thickest part of breast and 170 to 175 degrees in thickest part of thighs, 1 to 2 hours longer. Remove baking sheet from oven and transfer rack with turkey to second baking sheet. Allow pieces to rest at least 30 minutes or up to 1½ hours.

4. **FOR THE GRAVY:** Strain vegetables and liquid from baking sheet through colander set in large bowl. Press solids with back of spatula to extract as much liquid as possible. Discard vegetables. Transfer liquid in bowl to 4-cup liquid measuring cup. Add chicken broth to measuring cup (you should have about 3 cups liquid).

5. In medium saucepan, heat butter over medium-high heat; when foaming subsides, add flour and cook, stirring constantly, until flour is dark golden brown and fragrant, about 5 minutes. Whisk in broth mixture and bay leaves and gradually bring to boil. Reduce heat to medium-low and simmer, stirring occasionally, until gravy is thick and reduced to 2 cups, 15 to 20 minutes. Discard bay leaves. Remove gravy from heat and adjust seasonings with salt and pepper. Keep gravy warm.

6. **TO SERVE:** Heat oven to 500 degrees. Place baking sheet with turkey in oven. Roast until skin is golden brown and crisp, about 15 minutes. Remove baking sheet from oven, transfer turkey to cutting board, and let rest 20 minutes. Carve and serve, passing warm gravy separately.

COOK'S LIVE Original Test Kitchen Video

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HOW TO MAKE

• Slow-Roasted Turkey with Gravy

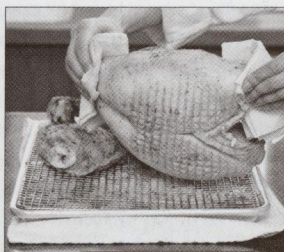
STEP-BY-STEP SLOW-ROASTED TURKEY WITH GRAVY



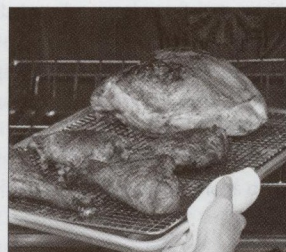
1. **ADD AROMATICS**
Aromatics and broth catch drippings and help flavor gravy.



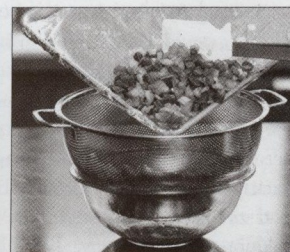
2. **ARRANGE MEAT**
Arrange turkey on rack set over vegetables to allow air circulation. Roast at 275 degrees.



3. **FLIP BREAST**
Flip breast partway through cooking to ensure uniform doneness.



4. **REST, THEN CRISP**
Let turkey rest to allow juices to redistribute before final crisping in 500-degree oven.



5. **MAKE GRAVY**
Strain vegetables and broth, then use this flavorful liquid as a base for gravy.