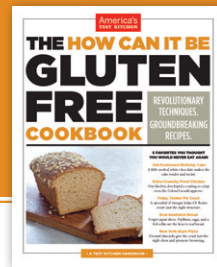


INSIDE THE TESTING PROCESS

Q&A WITH JACK BISHOP • Editorial Director of America's Test Kitchen



Why did the test kitchen do this book?

JACK BISHOP: Our test kitchen is committed to helping people become more successful when they cook at home. Over the past few years, we have received a chorus of requests from readers who want gluten-free recipes. They wanted us to reengineer favorite dishes. Our test kitchen methodology is designed to solve problems just like this. We test various ingredients and techniques in order to develop recipes that work. And we have the resources to test as many times as needed. If we need to make 500 blueberry muffins to perfect this one recipe, we will. (And we did.)

Who worked on this book and how did they set goals for developing recipes?

JACK BISHOP: Two members of the test kitchen team that worked on this book have gluten-related health issues, so they were particularly excited to work on this project. The rest of the team often cooks for people who can't eat gluten. Our goal was simple: Develop recipes that are good enough to serve to everyone—including those who *can* eat wheat. We focused on recipes that are the hardest to get right without flour—lasagna, pizza, apple pie, fried chicken, banana bread—as well as recipes that rely on naturally gluten-free grains and noodles that may not be all that familiar to people, such as oat berries, millet, quinoa, and soba noodles. Recipes had to meet the same standards for quality that we use for all the test kitchen's work.

What is gluten?

JACK BISHOP: Wheat flour contains two proteins: glutenin and gliadin. When flour is hydrated, these proteins uncoil and link together to form a membrane-like network called gluten. This network provides baked goods with their shape and structure. The gluten network traps gas bubbles (from yeast, baking powder, or baking soda) and expands, allowing baked goods to rise.

What are the challenges when trying to replace wheat flour in recipes?

JACK BISHOP: In theory, there are many flours that can take the place of wheat flour—everything from rice flour to chickpea flour. But most of these flours have less protein than wheat flour so they produce baked goods with structural problems. In addition, the proteins in many of these flours are not as sticky and elastic as glutenin and gliadin, the proteins in wheat flour. As a result, any protein network that develops in a gluten-free dough or batter isn't terribly strong, so getting a good rise is a real challenge. Finally, some of these flours have strong flavors that can seem out of place in many recipes.

What is the best replacement for wheat flour?

JACK BISHOP: No single flour is going to mimic wheat flour. The challenge is to find a mix of flours and starches that will come close. America's Test Kitchen developed its own blend that you can make at home in 2 minutes. A team of six test cooks worked for two months baking thousands of muffins and cookies to figure out the best formula. We chose white rice flour as the main ingredient because of its mild flavor. A little brown rice flour keeps the starchiness in check. Potato starch increases tenderness and tapioca starch enhances elasticity. Finally, a little nonfat milk powder boosts browning.

Do you really need to make your own gluten-free flour blend?

JACK BISHOP: We think our blend works better than store-bought blends. It's also half the price. Unlike brands of wheat flour, which all contain the same ingredient, brands of gluten-free flour vary widely because they each contain different ingredients in different ratios. Although we think our blend works best in our recipes, we did test every single recipe in the book with two widely available commercial flour blends—made by King Arthur and Bob's Red Mill. Individual recipes provide notes on how to use these two commercial blends.

What was the weirdest thing you tried when testing gluten-free recipes?

JACK BISHOP: Some sources suggest that calcium carbonate can be added to gluten-free baked goods to make them more tender. You can't buy calcium carbonate in the supermarket, but it is the active ingredient in Tums. So we ground antacid pills and added them to several muffin tests. It actually worked—the muffins were nice and tender—but in the end we found other ingredients—ones that aren't so weird—that could do the same thing.

What was the hardest recipe to reengineer without wheat flour?

JACK BISHOP: Cookies seem so simple but they are really complex. The dough has to provide structure, which is quite different from a cake or a pie, where the pan is helping. In our early tests with chocolate chip cookies, all the dough balls melted into a single blob. They simply couldn't hold their shape in the oven. This is a good example of a recipe where a little binder, like xanthan gum, really helped.

Why do some gluten-free recipes contain xanthan gum, and what is it?

JACK BISHOP: Most GF baked goods need some sort of binder, such as xanthan gum. The protein structure in these alternative flours isn't as sticky and elastic as gluten (the protein structure in wheat flour). These binders act a bit like glue, making weak protein structures stronger. Xanthan gum is manufactured in food labs and used in a wide variety of products—everything from bottled salad dressings to toothpaste. Some commercial GF flour blends contain xanthan. We decided to omit any binder from our blend so we could add just the right amount of binder (or omit it altogether) to each recipe. This also allowed us to use different binders in different types of recipes.

What is the secret to making really good gluten-free bread?

JACK BISHOP: Most gluten-free breads are very dense and heavy. That's because there is not much protein in GF flours, and it's protein that creates structure and traps air bubbles. We found that a number of things help. First off, you need to use both yeast and baking powder for extra lift. You can only add so much yeast before impacting the flavor, and it's not enough unless you add some baking powder. You also need to make doughs much wetter than normal. Extra water translates into extra steam in the oven, and that means more rise. Because of all that water, many GF breads need to bake significantly longer than wheat breads.

Why do your sandwich bread recipes call for a foil collar?

JACK BISHOP: GF flour blends contain much more starch than wheat flour, and starches don't set up and become firm in the oven—that happens once the starches cool. As a result, GF bread doughs can't hold their shape when they bake—they rise up but then over the sides of the loaf pan. This is why most GF sandwich breads are so squat. Bakers don't want the dough to spill over the sides of the pan, so they use less dough. The result is a very small loaf that makes very tiny sandwiches. We solved this problem by making the loaf pan taller. We wrap foil around the top of the pan to make a collar—the same trick that chefs use to give soufflés extra height.

Is there such a thing as good gluten-free pasta?

JACK BISHOP: Our tasting panel was skeptical when we asked them to rate eight brands of gluten-free spaghetti. Some are made with rice, while others rely on corn and/or quinoa. Would any cook up with proper al dente texture? The bad news: Seven of the eight brands were disappointing, with assessments ranging from “mediocre” to “This is not pasta.” The good news: We found one brand that was remarkably good, even when tasted plain. Jovial Gluten Free Brown Rice Pasta, Spaghetti is made with just brown rice and water and cooked up with a “springy” texture that our tasters praised. And it has none of the off-flavors that plagued other brands.

What are some favorite recipes in this collection?

JACK BISHOP: Two standouts are the pizza recipe and the pie dough. Most GF pizza crusts are more like crisp crackers. Our pizza has just the right amount of chew. The secret ingredient: a little almond flour (which you can make yourself by grinding blanched almonds in a food processor). And our pie dough is remarkably tender and flaky—no one will ever guess it's made without wheat flour. It bakes up perfectly in pumpkin, apple, and blueberry pies and can be used in chicken pot pies as well as quiches.



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JACK BISHOP is the editorial director of America's Test Kitchen. He joined the staff of *The Cook's Magazine* in 1988 and helped with the launch of *Cook's Illustrated* in 1993. He established the tasting protocols used at America's Test Kitchen and has authored dozens of articles for the magazine. Jack directed the launch of *Cook's Country* magazine and oversees editorial operations at both magazines. He is the tasting lab expert on *America's Test Kitchen*, the top-rated public television cooking show, and *Cook's Country from America's Test Kitchen*. Jack edited *The Best Recipe* (1999) and established the book division at America's Test Kitchen. He is the author of several cookbooks, including *A Year in a Vegetarian Kitchen*, *Vegetables Every Day*, *The Complete Italian Vegetarian Cookbook*, *Pasta e Verdura*, and *Lasagna*. Jack's wife, Lauren Chattman, is a cookbook author and a former pastry chef. They have two daughters.

