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How to Make Any Kind of Custard (& Avoid Any Dastardly Clumps or Curdling)

by: Erin McDowell
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There's a million things to love about custard. First off, the term itself encompasses everything from puddings cooked on the stovetop to crème brûlées baked in the oven to panna cottas that set up in the fridge. I also love custards for their adaptability: It's easy to use different sweeteners (like honey, maple syrup, agave) and many of them are gluten-free (or can easily be made so with a swapping of starch). But, most of all, they're easy to make and delicious and comforting to eat. It's one category of desserts that's got it all *goin' on*.

Ready to get whisking? Here's what you need to know:

Ingredients.

Types of custards.

What you *don't* know about custards.

Sugar + starch.

Mastering the liaison.

Tempering.

Determining doneness.

The recipes!





Yes, these could all be yours! | PHOTO BY MARK WEINBERG

1. The ingredients.

As I mentioned earlier, custards generally have a really short ingredient list. They're made up of a **dairy component** (milk, cream, half and half, etc.), a **sweetener**, a **thickener** (eggs, starch, gelatin, or a combination), and **flavoring ingredients**. When I'm looking for an easy dessert, custard's simpleness always appeals to me. It's important to remember, though, so few ingredients can also mean you have to be extra careful with your process, making sure to handle each ingredient properly during the mixing and cooking of the custard to achieve success.

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Now, how the ingredients are handled will vary based on the type of custard you're making. Even though most techniques are quick, there are often time sensitive moments in the preparation of every custard recipe. **Be sure to read your recipe all the way through before you begin, and prepare any and all equipment you might need** (including things like the vessels you'll portion it into, the dish it needs to cool in, an ice bath, a strainer—things like that). That way, once you begin the process, you're more likely to make it through smoothly and successfully!

2. Types of custards.

There are so many kinds of custard! When this many desserts come to a party, the easiest way to classify them is by their cooking method:





A baked custard getting cozy in a water bath. | PHOTO BY MARK WEINBERG

Baked Custards

Baked custards are exactly what they sound like: a custard that's cooked by baking in the oven. These custards have the easiest method of the bunch. The ingredients are whisked together, poured into a vessel, and baked until set. Baked custards are generally thickened with only eggs and/or egg yolks, which makes them one of the more delicate custards. Even with such an easy pre-oven method, they can be some of the hardest to master.

Baked custards are generally baked in a water bath, which helps regulate the water temperature around the custard, as it cannot exceed 212°F. **The water's cooler temperature encourages a slow and steady coagulation of the eggs, which (ideally) prevents curdling or over-baking.** While I highly recommend water baths in most cases, it's possible to bake an excellent custard without one. For example, custard pies don't usually use a water bath—and with proper baking times and temperatures, they can still turn out soft, uncurdled, and uncracked. Baked custards are generally baked at lower temperatures: 325-350°F, with custard pies being a notable exception, often being baked as high as 375°F. Some examples of baked custards are: **crème brûlée, pot de crème, and flan.**

Boiled Custards

Boiled custards are made by slowly cooking ingredients on the stovetop until thickened. What separates these custards from the next category (stirred custards) is they are **usually made with a combination of thickeners**, using both eggs and/or yolks along with a starch to set the texture. Because the two are used together, it's important the custard comes to an actual boil. Why? Because of some neat science stuff (a.k.a. I'm about to nerd out on ya'll for a second)!

Eggs contain a naturally occurring enzyme called amylase. This enzyme helps to digest carbohydrates. This is super cool in, say, human bodies where amylase is produced by our salivary glands and begins to break down food. But when this enzyme is put in the presence of a starch in a custard, it can really muck things up. Say you're making a recipe that uses egg yolks and cornstarch (like the pudding in this article!). The mixture's looking thick and glossy and beautiful, but it hasn't come to a boil just yet—and you think, "Oh well, it looks nice. must be done." After popping the pudding in the fridge and coming back to it later, it's suddenly a pool of soupy custard. Why? That crazy amylase essentially processed all of the starch in the recipe, ruining the texture! However, boiling kills that silly enzyme (sorry, amylase—you're usually good, just not inside my pudding), which means **the texture you have at the end of cooking will be the same texture you have at the end of cooling, too!** Some examples of boiled custards are pudding, and pastry cream.





Is it boiled or stirred? (Hint: the former!) | PHOTO BY MARK WEINBERG

Stirred Custards

Stirred custards are also prepared on the stovetop, but because they are made with just eggs and/or yolks, they do not need to come to a boil. Actually, bringing them to a full boil can cause the mixture to curdle, resulting in a lumpy, eggy-tasting mixture instead of a thick, silky-smooth custard. When making stirred custards, **it's important to start with a whisk, which helps keep the mixture in motion during the early stages of cooking.** But once the mixture begins to thicken, it's best to switch to a silicone spatula to stir. This way, you can be certain the mixture is cooking evenly—as stirred custards tend to like to thicken more on the base, corners, and sides of the pan, where they are in contact with more direct heat. Some examples of stirred custards are crème anglaise and sabayon (which is usually prepared over a double boiler rather than directly in the pot).

Cold Set Custards

Cold set custards are custards that are mixed and then **set in the fridge until chilled.** There are only a few types of custards that fall into this category, and their methods of preparation differ. One example is panna cotta, which is set with gelatin. The mixture is heated to dissolve the sweetener and/or infuse flavor into the custard, then the gelatin is added and the custard's poured into vessels. The finished custard is chilled until totally set, and then served (either in the vessel or unmolded). Another example of a cold set custard is mousse, which uses aerators (like meringue and/or whipped cream) and sometimes gelatin to achieve its final texture. You can read more about mousse here.

Frozen Custards

Frozen custards are custards that are frozen! This includes the aptly named frozen custard, but also most ice creams, gelatos, and some semifreddos. These recipes often are made using **stirred custards that are cooled completely and then churned into a frozen dessert** (like crème anglaise, which is the base for basic vanilla ice cream).

3. What you don't know about custards.

I'll put on my best gameshow host voice to talk about this subject. You know all the methods that can be used to make custard. Now, it's time to find out some things you don't think are custards are, in fact, custards. My favorite example is cheesecake, which isn't actually a cake at all, but a baked custard. Most cheesecake recipes don't have starch in them (except maybe in the crust)—just plenty of eggs, which slowly coagulate in the oven, eventually achieving silky-smooth perfection (a custard!). Another example is fruit curd, like lemon curd, which is traditionally a stirred custard, thickened with egg yolks. Some curd recipes also contain starch, which, in that case, makes it a boiled custard.





Whisk the sugar and starch together for less clumps. | PHOTO BY MARK WEINBERG

4. Sugar + starch = a match made in clump-free heaven.

Now that you understand the makings of a custard, it's time for a few tips and tricks to help you master the *perfect* custard. First up: starch. Starch tends to clump up inside the custard—and it can very hard to get those clumps out. Not only that, but clumped up starch doesn't dissolve properly into the custard, which means your finished dessert may not have the proper texture.

There is, however, an easy way to avoid this: **just whisk the starch with a portion of the sugar before you begin.** Many recipes for custards will divide the sugar, combining some with the heated dairy (this dissolves both the sugar and helps prevent scalding) and stirring the remaining sugar with your starch, either with a small whisk or a fork. The granules of the sugar will help break up the starch, and it will coat the sugar instead of clinging to itself. Even if a recipe doesn't call for this step, I highly recommend adding it. It's so easy and prevents clumping every time.





Temper (slowly!) the egg yolk-sugar mixture (a.k.a. the liaison). | PHOTO BY MARK WEINBERG

5. Mastering the liaison.

If a recipe uses eggs to thicken it, it most likely is going to require to make a liaison. It's basically a fancy French word for the eggs/yolks once they are mixed with the sugar (and, yes, the starch, if you've followed my advice from above, when applicable). Seems simple enough: mix eggs with sugar. **But slow your roll, my fine custard-making friend!**

If you've read some of my past articles, you may have heard me talk about a unique property of sugar: It's hygroscopic, meaning it has the ability to absorb moisture from the atmosphere surrounding it. So, if you mix the sugar and eggs together too long before you need to use them, it can have some negative consequences. Have you ever heard that rumor that sugar can cook eggs if they're left to set too long? Well, that's not exactly true. In reality, the sugar is absorbing moisture from the nearest possible source: the eggs or yolks. Once it's absorbed all of the liquid it possibly can, what's left are the proteins in the egg, resulting in a mixture that looks clumpy and hard instead of smooth and liquid. So, first rule of the liaison: don't mix it until just before you're ready to use it. **You don't want the eggs and sugar sitting together for much longer than a few minutes.**



This is what it should look like when it's done being tempered. | PHOTO BY MARK WEINBERG

6. Tempering.

When it comes to custards, tempering means gradually adding two mixtures together. It's usually referencing actual temperature, and more specifically, referring to adding the hot dairy to the room temperature eggs/yolks. If you pour whisked eggs directly into a hot pan, they'll begin to cook immediately, resulting in something that looks and tastes a lot more like scrambled eggs than custard. Instead, **slowly add the hot liquid to the eggs in a slow, steady stream while whisking constantly to combine the two.**

This allows you to bring the eggs to a higher temperature in a more controlled way, which means you're less likely to coagulate those proteins. Once you've warmed up the egg mixture with a portion of the hot milk (about 1/3, but no need to be precise), you can slowly pour this mixture back into the pot (again, whisking constantly) and continue with the recipe.

7. Determining doneness.

Determining doneness is one of the things that makes custards trickier than their short ingredient list may make them seem! The method changes as the cooking technique does, so check out my advice depending on each type of custard:

Baked Custards

Baked custards are finished when the outside is set and the inside is still jiggly. Yes, jiggly! When you gently shake the vessel you're baking the custard in (whether it's a ramekin for something like pot de crème or a springform pan for something like a cheesecake), the custard should appear totally set on the edges, but ripple gently when you shake it in the center. It shouldn't look like liquid, but have a few slow-moving ripples radiating from the center when moved. **Remember, the custard will continue to firm up when it cools.** If a baked custard has cracks, it means it was over-baked. Cracks in the center mean it spent too long in the oven, while cracks closer to the sides means it baked unevenly (a water bath can help here, but it might also mean there's hot spots in your oven).



It's bubbling! | PHOTO BY MARK WEINBERG

Boiled Custards

Boiled custards are finished when they just begin to boil. You only need to see 1 to 2 large bubbles to be sure the amylase enzyme has been eliminated. However, it's important to note **these bubbles should appear near the center of the pot**. Tiny little bubbles around the outside of the pan don't count since the edges are in more direct contact with heat (touching the sides of the hot pot). Keep stirring your custard constantly with a silicone spatula to ensure it's in constant motion and cooking evenly, only stopping once you see signs of boiling in the center. Don't over-boil your custards, though, as they can begin to over-coagulate and become less smooth and glossy, and can take on an overly eggy taste. Boiled custards can be covered directly with plastic wrap while they cool to prevent a skin forming on the surface (I happen to like pudding skin, so I often skip this step).





PHOTO BY MARK WEINBERG

Stirred Custards

Stirred custards are finished when they are fully thickened and what this means will depend on the recipe in question. **Most often, it's referring to nappe consistency, which means the mixture is thick enough to coat the back of a spoon.** Dip your spoon or spatula into the custard, then run your finger through it. If the line made by your finger stays, the mixture is properly thickened. Like boiled custards, stirred custards can be covered directly with plastic wrap while they cool to prevent a skin from forming on the surface.

Cold Set Custards

Cold set custards are finished when they're fully chilled. Unmold cold set custards by running a paring knife gently around the edges to help release it. I also recommend using disposable molds, if you can (thick cupcake liners work very well, but so do paper or plastic cups). That way, you can just tear or snip the mold away for the cleanest look.

Frozen custards

Frozen custards will vary greatly in what makes them "done". Follow guidelines for your ice cream maker or refer to specific recipes for more details and visual cues.



From left to right: Butterscotch Pudding, Crème Anglaise, Blackberry Pots de Crème, and Milk Chocolate Panna Cotta. | PHOTO BY MARK WEINBERG

Now that you've got your custard basics down, here are some recipes to try!





Butterscotch Pudding

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Ingredients

3 cups whole milk
 1/2 cup heavy cream
 1/2 vanilla bean, scraped
 1/2 teaspoon salt
 3/4 cup dark brown sugar, divided
 1/4 cup cornstarch
 4 large egg yolks
 3 cups whole milk
 1/2 cup heavy cream
 1/2 vanilla bean, scraped
 1/2 teaspoon salt
 3/4 cup dark brown sugar, divided
 1/4 cup cornstarch
 4 large egg yolks





Milk Chocolate Panna Cotta

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Ingredients

1/4 cup cool water
 1 1/4 teaspoons powdered gelatin
 2 1/4 cups heavy cream
 1/4 cup sugar
 14 ounces milk chocolate, chopped
 4 ounces dark chocolate, chopped
 1 1/2 teaspoons vanilla extract
 1/4 cup cool water
 1 1/4 teaspoons powdered gelatin
 2 1/4 cups heavy cream
 1/4 cup sugar
 14 ounces milk chocolate, chopped
 4 ounces dark chocolate, chopped
 1 1/2 teaspoons vanilla extract



Crème Anglaise

[View Recipe](#)

Ingredients

1 1/4 cups whole milk
 1 1/4 cups heavy cream
 1/2 vanilla bean, scraped
 1 pinch salt
 1 cup granulated sugar, divided

6 ounces egg yolks (from about 8 eggs)
 1 1/4 cups whole milk
 1 1/4 cups heavy cream
 1/2 vanilla bean, scraped
 1 pinch salt
 1 cup granulated sugar, divided
 6 ounces egg yolks (from about 8 eggs)



Blackberry Pots de Crème

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[Ingredients](#)

12 ounces blackberries
 1/3 cup sugar
 2 1/4 cups heavy cream
 3/4 teaspoon vanilla extract
 6 egg yolks
 12 ounces blackberries
 1/3 cup sugar
 2 1/4 cups heavy cream
 3/4 teaspoon vanilla extract
 6 egg yolks

Erin McDowell is a baking aficionado, writer, stylist, and Test Kitchen Manager at Food52. She is currently writing a cookbook. You can learn more about her here.

Have any custard questions? Let us know in the comments below!



Written by: Erin McDowell

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I always carry three kinds of hot sauce in my purse. I have a soft spot for making people their favorite dessert, especially if it's pie. My first cookbook, *The Fearless Baker*, is out on October 24, 2017.

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