Cold Brew Complete

Encyclopedia entries on cold brew coffee — slow cold extraction, ratios, steep time, filtration, and the variations that include nitro and Japanese iced.

- Cold Brew Coffee: Method, Ratios, and the Science of Slow Extraction

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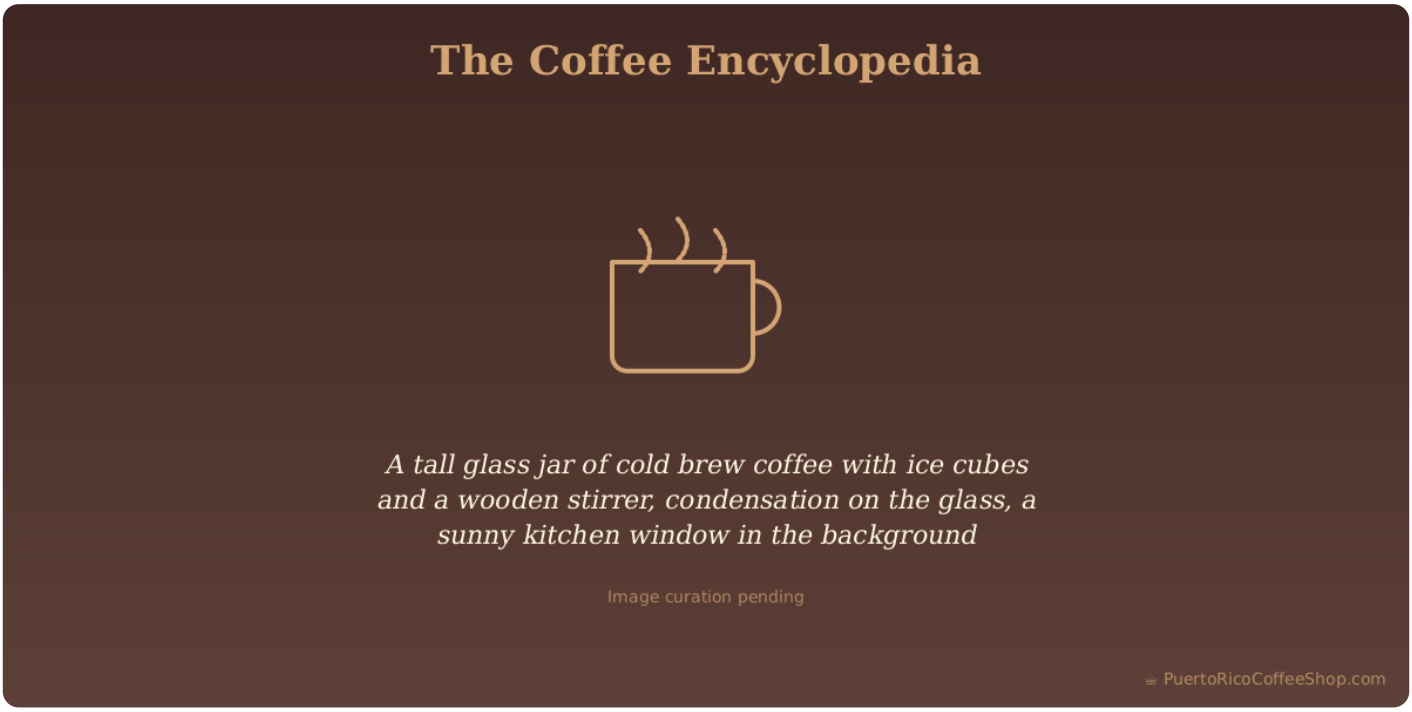


Cold brew is not iced coffee. Cold brew is coffee extracted slowly in cold water over twelve to twenty-four hours, producing a concentrate that is fundamentally different in chemistry, flavor, and acidity from any hot-brewed coffee chilled after the fact. Understanding what changes when extraction happens cold is the difference between making cold brew accidentally and making cold brew on purpose.

The cold-water extraction time is what defines cold brew, and it is also what makes the method so forgiving. There is no precise pour, no temperature dial, no four-minute timer — just coffee, water, time, and a strainer at the end. Done right, cold brew yields a smooth, sweet, low-acid concentrate that holds in the refrigerator for two weeks, dilutes to any strength, and works equally well over ice, in milk, or as the base for coffee cocktails. The catch is that "right" requires understanding what cold extraction actually

does to coffee, which is where most cold brew recipes go wrong before they even start.

The Difference Between Cold Brew and Iced Coffee

Iced coffee is hot-brewed coffee that is cooled — typically by pouring hot coffee directly over ice, brewing extra-strong hot coffee and chilling it, or using the Japanese flash-brew method (hot brewing directly onto ice in the carafe). The flavor profile of iced coffee mirrors the flavor profile of the hot coffee that produced it: same acids, same aromatics, same bitter compounds, just cooled.

Cold brew is fundamentally different because it never gets hot. The extraction happens at room temperature or refrigerator temperature, where most of the volatile aromatic compounds, most of the chlorogenic acids, and most of the bitter pyrazines that develop

during hot brewing simply do not extract well. What you get instead is a concentrate dominated by the slowly soluble compounds: sugars, certain non-volatile acids, caffeine, and the heavy body compounds that contribute mouthfeel. The result tastes sweeter, smoother, less acidic, and noticeably less bright than even the same beans hot-brewed and chilled.

The Science of Slow Cold Extraction

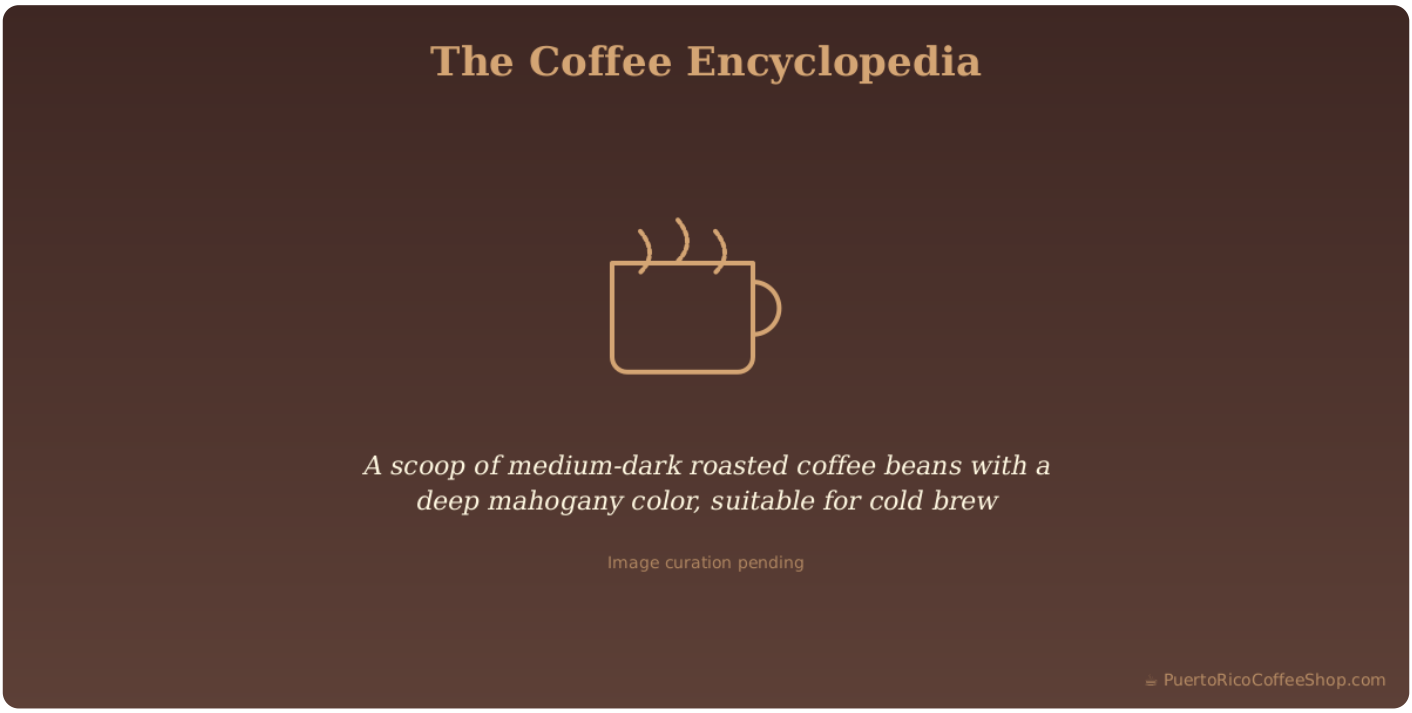
Coffee extraction depends on temperature in a non-linear way. Different compounds in the coffee bean dissolve at different rates and at different temperature thresholds. Caffeine extracts well across a wide temperature range and dissolves into cold water given enough time. Chlorogenic acids — the compounds responsible for much of coffee's perceived acidity — extract heavily at high temperatures and very poorly at low temperatures. Volatile aromatics extract during hot brewing in seconds and barely extract at all during cold brewing. Bitter alkaloids and pyrazines are largely absent from cold brew because they require heat to release.

The practical effect is that cold brew yields roughly 60 to 70 percent of the total dissolved solids that the same beans would yield in hot brewing, but the composition of those solids is shifted toward the sweet, smooth, full-bodied compounds and away from the bright, acidic, sharp compounds. This is why cold brew tastes "smoother" and "less acidic" — the chemistry is genuinely different, not just the temperature. Cold brew is also typically higher in caffeine per serving than hot coffee, because the standard concentrate is made at a much higher coffee-to-water ratio and the slow extraction has plenty of time to pull caffeine into solution.

Choosing Beans for Cold Brew

The best beans for cold brew are not necessarily the best beans for hot brewing. Single-origin light roasts that shine in pour-over often taste flat and one-dimensional in cold brew because the bright acids and volatile aromatics that define those beans simply do

not extract cold. Conversely, medium-to-dark roasts that produce muddy or burnt cups when hot-brewed often produce excellent cold brew because their developed sugars and reduced acidity match the cold-extraction profile.



The general guidance is to choose medium to medium-dark roasts with chocolate, caramel, nutty, or low-acid fruit flavor notes. Brazilian, Sumatran, and Central American beans tend to perform well. Bright Ethiopian or Kenyan beans, beloved in pour-over, are usable but underperform their hot-brewed potential. Blends specifically labeled "cold brew" are usually pre-tuned for this profile. Avoid using extremely fresh beans (less than seven days off-roast) because the heavy CO2 release can cause foaming and uneven extraction during the long steep; ten to thirty days off-roast is the cold brew sweet spot.

Grind Size and Why Coarse Wins

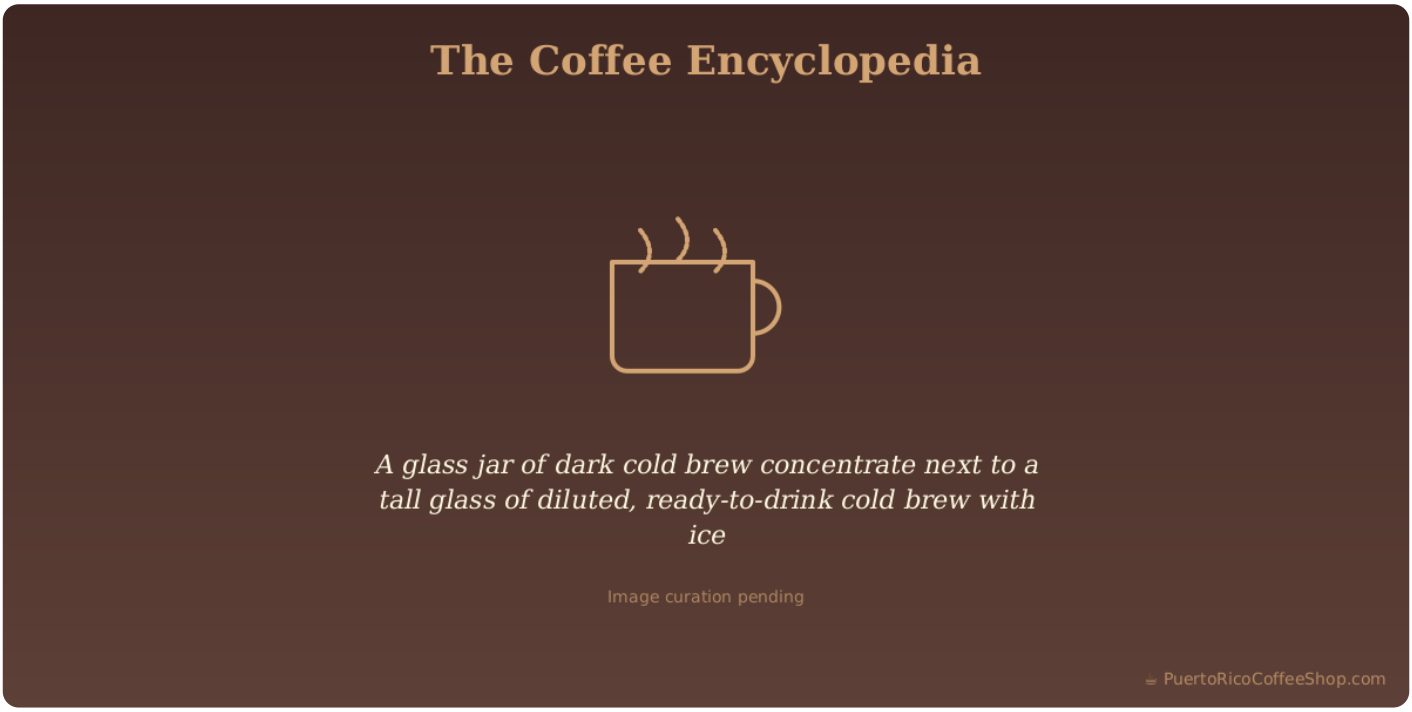
Cold brew uses a coarse grind for the same reason French press does — the long steep time at low temperature gives even coarse particles enough time to extract fully, and finer grinds risk passing through the filter as sediment and over-extracting the surface of each particle. A coarse cold brew grind looks like coarse sea salt, slightly

larger than typical French press, distinctly larger than drip.

The reason for going coarser than French press is the longer steep time. A French press at four minutes can use a slightly finer grind because the contact time is short. A cold brew at sixteen hours has four times the contact time and benefits from coarser grind to keep extraction balanced. Going too fine in cold brew produces an over-extracted, slightly bitter concentrate, even though the water never got hot. Going too coarse produces an under-extracted, watery concentrate. The right coarse-but-not-too-coarse range is forgiving — most burr grinders set to "French press coarse" or one click coarser will work.

Ratios: Concentrate vs. Ready-to-Drink

Cold brew comes in two ratio philosophies. Concentrate cold brew uses a 1:4 to 1:8 ratio of coffee to water by weight, producing a strong, syrupy liquid intended for dilution at serving time. Ready-to-drink cold brew uses a 1:10 to 1:15 ratio, producing a beverage-strength brew that can be poured over ice and consumed without dilution.



The concentrate approach has practical advantages. A single 1:5 batch made with 200 grams of coffee in 1 liter of water produces about 800 milliliters of concentrate, which dilutes 1:1 with water or milk to make 1.6 liters of finished cold brew — enough for a week of daily drinks. The concentrate stores compactly in the refrigerator and lets you adjust strength to taste at every serving. The ready-to-drink approach is simpler but less flexible; the brew is what it is, and you cannot easily make it stronger after the fact.

A typical concentrate recipe is 1:5 by weight: 200 grams of coarsely ground coffee in 1000 grams of cold filtered water, steeped for sixteen to eighteen hours, filtered, and stored. Dilution at serving is typically 1:1 with water for a clean cold brew, or 1:1 with milk for an iced latte equivalent. The concentrate alone is too strong to drink straight; the dilution is the second half of the recipe.

Steep Time: 12, 18, 24 Hours Compared

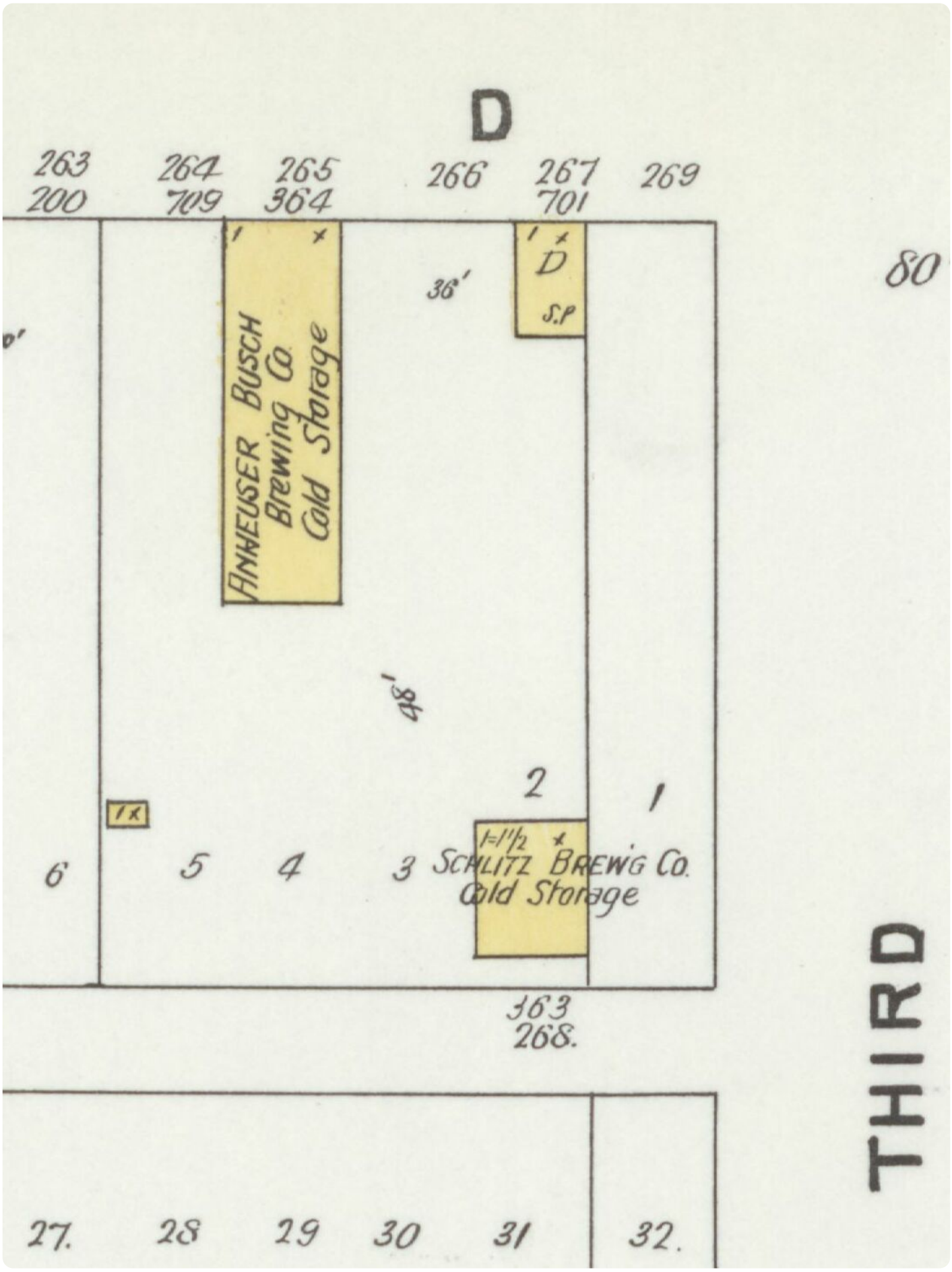
Cold brew steep time is the single most adjustable variable, and the differences across the typical range are real. A twelve-hour steep produces a brighter, less developed cold brew with more recognizable origin character — closer to a mild iced coffee in flavor. An eighteen-hour steep is the standard sweet spot, balancing extraction yield against the slow drift toward over-extraction; this is what most commercial cold brews target. A twenty-four-hour steep produces a heavier, slightly muskier concentrate with maximum extraction yield and the smoothest mouthfeel, at the cost of some clarity and freshness.

Beyond twenty-four hours, extraction continues but the additional yield is small and the cup begins to develop slightly muddy notes. Forty-eight-hour steeps occasionally appear in coffee shop recipes but usually represent personal preference more than improvement. The temperature of the steep matters too: refrigerator-temperature steeps (4°C / 39°F) extract more slowly and benefit from the longer end of the time range; room-temperature steeps (20°C / 68°F) extract faster and work better at twelve to fourteen hours.

Filtration: Cheesecloth, Paper, Mesh

After steeping, the cold brew has to be separated from the grounds, and the choice of filter shapes the final product. Cheesecloth, used as a single layer or doubled, is the simplest filter — wrap the grounds in cheesecloth before steeping or strain through cheesecloth at the end. The result is a relatively heavy-bodied cold brew with most fines passing through; this is the rustic style that suits home batches.

Paper filtering — pouring the strained brew through a paper coffee filter or a Chemex filter — produces a notably cleaner cold brew with sediment and oils removed, similar to how paper filtering changes hot drip coffee. The cup is brighter, lighter, and more refined, at the cost of some body. Specialty cold brew makers (Toddy, Filtron, OXO Cold Brew) use a primary filtration through bonded mesh or fabric, sometimes with a secondary paper filter, producing a balance between body and clarity. For most home batches, mesh straining followed by a paper filter pour is the practical optimum: easy first pass to remove most material, polish pass to clarify the result.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Storage and Shelf Life

Properly filtered cold brew concentrate stores in the refrigerator for ten to fourteen days with minimal flavor degradation. After two weeks, oxidation begins to dull the flavor noticeably, and after three weeks the cup tastes flat and slightly stale. Storage in glass with a tight-fitting lid extends the freshness window slightly compared to plastic; plastic is fine for shorter holds. Always store cold brew in the refrigerator, not at room temperature; the long shelf life depends on the cold suppressing microbial growth, and warm cold brew can develop off-flavors and even spoilage within days.

The dilution version (ready-to-drink cold brew) has a shorter shelf life — typically five to seven days — because the lower coffee concentration means lower antimicrobial protection from coffee's natural compounds. Cold brew with milk or sweetener added has even shorter shelf life and should be consumed within two days. Freezing cold brew concentrate into ice cubes is a clever workaround for longer storage; the cubes can be added to fresh water or milk months later and produce decent cold brew on demand.

Cold Brew Variations: Nitro, Japanese Iced, Flash Brew

Three notable variations fall under or near the cold brew umbrella. Nitro cold brew is cold brew (typically a slightly leaner ratio than standard concentrate) infused with nitrogen gas at high pressure, served from a tap with a cascading effect similar to Guinness. The nitrogen creates a creamy mouthfeel, light foam head, and apparent sweetness without added sugar. Nitro tastes denser and rounder than the same cold brew without nitrogen and has become a cafe staple.

Japanese iced coffee is technically not cold brew at all — it is hot pour-over coffee brewed directly onto ice in the carafe, with the brewing water volume reduced to account for the ice that becomes part of the final brew. The result is a bright, aromatic, hot-style coffee that is fully chilled by the end of the brew. Japanese iced coffee preserves the volatile aromatics and bright acidity that cold brew loses, and it brews in the same five minutes as a hot pour-over. It is the right answer when the goal is "iced

version of this single-origin" rather than "smooth low-acid summer drink."

Flash brew is the broader category that includes Japanese iced; any method that brews hot coffee directly onto ice or rapidly chills hot brew through cold contact qualifies. Flash brew sits between cold brew and iced coffee in flavor, capturing some of the brightness of hot brewing with some of the smoothness of rapid chilling. None of these variations replace cold brew; each occupies a slightly different point in the iced-coffee design space, and serious coffee programs often offer two or three of them side by side.

https://www.youtube.com/embed/8uGGeV8A-BM

Frequently Asked Questions

How much coffee for cold brew concentrate?

Use 200 grams of coarsely ground coffee in 1000 grams of cold filtered water (1:5 ratio) for a standard concentrate. Dilute 1:1 with water or milk at serving. Adjust within 1:4 to 1:8 based on desired strength and how heavily you plan to dilute.

How long should cold brew steep?

Sixteen to eighteen hours at room temperature is the standard sweet spot. Twelve hours produces a lighter, brighter cold brew; twenty-four hours produces a heavier, fuller one. Refrigerator steeping benefits from the longer end of this range.

Why does cold brew taste less acidic than iced coffee?

The acids that produce coffee's perceived acidity — primarily chlorogenic acids — extract heavily in hot water and very poorly in cold water. Cold brew literally contains less of these acids than the same beans hot-brewed, which is why the cup tastes smoother and rounder regardless of the bean's origin character.

Is cold brew higher in caffeine?

Concentrate cold brew, served at typical concentrate strength, has roughly twice the caffeine per ounce of standard hot drip coffee. Diluted to drinking strength, the caffeine per cup is similar to or slightly higher than hot coffee, depending on the ratio. Caffeine extracts well into cold water given the long steep time.

Can I use any beans for cold brew?

Technically yes, but medium to medium-dark roasts with chocolate, caramel, nutty, or low-acid notes perform best. Bright single-origin light roasts often taste flat in cold brew because their defining compounds do not extract cold. Match the bean to the method for the best result.

Key Facts

- **Standard concentrate ratio:** 1:5 by weight (200 grams coffee to 1000 grams water).
- **Ready-to-drink ratio:** 1:10 to 1:15 by weight.
- **Steep time:** 16 to 18 hours at room temperature; 18 to 24 hours refrigerated.
- **Grind size:** Coarse, slightly larger than French press; like coarse sea salt.

- **Bean preference:** Medium to medium-dark roasts; chocolate, caramel, nutty notes shine.
- **Acidity profile:** 60 to 70 percent lower than hot-brewed equivalent due to lower chlorogenic acid extraction.
- **Caffeine yield:** Comparable to or slightly higher than hot coffee per equivalent serving.
- **Shelf life:** Concentrate holds 10 to 14 days refrigerated; diluted brew holds 5 to 7 days.
- **Yield:** Roughly 60 to 70 percent of the total dissolved solids of hot extraction, with shifted composition.
- **Filtration:** Mesh first pass plus paper polish pass produces the cleanest cup.

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