

Moist Carrot Cake

Macerated + pressed carrot. Toasted-walnut butter distributed through the crumb. Mascarpone-tempered cream cheese frosting that holds at galley temperature.

Yield: **12 portions** (9×13" sheet) Active: **25 min** Total: **1 hr 40 min** Oven: **175°C** (350°F) Done: **95°C** internal

INGREDIENTS

METRIC · US VOLUME IN RIGHT COLUMN

MACERATION

Carrots, peeled, grated	400g	~5 med
Light brown sugar (for macerating)	30g	2 tbsp
Fine sea salt (draw moisture)	3g	½ tsp

DRY

All-purpose flour	260g	2¼ cups
Baking soda	6g	1 tsp
Baking powder	5g	1¼ tsp
Cinnamon, ground	5g	2 tsp
Ginger, ground	3g	1 tsp
Nutmeg, fresh-grated	1g	¼ tsp
Diamond kosher salt	5g	1 tsp

WET

Light brown sugar	190g	scant 1 cup
Granulated sugar	100g	½ cup
Neutral oil (grapeseed/sunflower)	200g	scant 1 cup
Eggs, large (RT)	150g	x3
Pure vanilla extract	8g	1½ tsp
Toasted-walnut butter (sub-recipe ↓)	60g	3 tbsp
Orange zest, microplaned	4g	1 orange

FROSTING

Cream cheese, full-fat (cold)	340g	12 oz
Mascarpone (cold)	115g	½ cup
Unsalted butter, soft (20°C)	85g	6 tbsp
Icing sugar, sifted	280g	2¼ cups
Pure vanilla extract	5g	1 tsp

Kit: 23×33 cm (9×13") pan · food processor · colander + towel · scale · thermometer · stand mixer · offset spatula · parchment

METHOD

1. Macerate carrot. Toss 400g grated carrot with 30g brown sugar + 3g salt. Colander over bowl. Stand **20 min**.

Osmosis draws ~30% free water out of carrot cells → concentrated flavour, less soggy crumb. — McGee 2004

2. Press dry. Squeeze in clean towel. Target ≤280g pressed carrot. Reserve 40g liquid (optional glaze).

SUB-RECIPE — TOASTED WALNUT BUTTER

Raw walnut halves, 160g · pinch fine salt (optional) · yields ~70g butter + 80g chopped garnish

2a. Toast all 160g at **165°C (325°F)**, 10–12 min. Cool 5 min.

3a. Split: **80g → food processor** 3–4 min → smooth butter (~70g). Use 60g in batter; 10g extra keeps 2 wk fridge.

4c. **Remaining 80g:** rough chop for garnish.

5d. *Maillard furaneol + pyrazines in the fat phase → roasted note in every bite. — López-Alt / Modernist*

3. Preheat 175°C (350°F). Butter + parchment 9×13" pan. Whisk all dry together.

4. Whisk wet. 190g brown sugar, 100g granulated, 200g oil, 150g eggs, vanilla, 60g walnut butter, orange zest. 1 min smooth.

5. Fold carrot into wet. 4 folds.

6. Add dry in 2 additions. Half → 6 strokes → second half → fold until just incorporated. Flour streaks fine. Tap pan twice. Bake **28–34 min**.

Soda reacts with brown sugar acidity immediately; powder activates on heat. Sequential lift prevents collapse before crumb sets. — McGee 2004

Done: Internal **95°C (203°F)**. Top springs back. Edges pull from pan. Toothpick: moist crumbs only.

Cool: 15 min in pan → wire rack. Frost only at ≤22°C (at least 60 min).

Frosting — mix while cake cools

6a. Paddle **cold cream cheese** 30 sec only. Add cold mascarpone, beat 20 sec.

7a. Add softened butter, beat 60 sec. Sift icing sugar in 2 additions, mix to incorporate only.

8c. Vanilla + pinch salt. Taste. If slack: refrigerate 15 min. *Mascarpone (60–75% fat) buffers frosting stability at 28°C. — ATK 2021*

9d. **Frost:** Offset spatula, 1 cm layer. Scatter toasted walnuts + orange zest. Chill 30 min before slicing.

ELEVATION

TIER 1 — NO EXTRA TIME

- **Cardamom + white pepper** — 1g + 0.5g in dry
- **Miso in frosting** — 10g white miso with butter
- **Dark brown sugar swap** — more molasses depth

TIER 2 — WORTH IT (+15 MIN)

- **Carrot-liquid glaze** — reduce 40g liquid + 20g sugar, brush warm cake
- **Candied ginger** — 50g diced, fold in at end
- **Part brown butter** — replace 100g oil with 85g browned

TIER 3 — RESTAURANT

- **Dehydrated carrot chips** — mandoline + 65°C / 2 hr, press into frosting
- **Pineapple soak** — 40g cold juice, brush warm cake
- **Toasted coconut** — 40g golden, press into fresh frosting

TROUBLESHOOT

Dense, wet crumb	Carrot not pressed. Target ≤280g. Squeeze in towel.
Frosting weeps	Cream cheese too warm or over-beaten. Start cold. 30 sec max on CC alone.
Sunk centre	Underbaked. Hit 95°C internal. Lower oven to 165°C if recurring.
Rubbery crumb	Overmixed. Count 12 strokes max after dry goes in.
Frosting too sweet	Add 10g cold cream cheese, mix 10 sec. Or pinch more salt.
Muddy spice	Stale spices. Replace if >6 months old. Freshly grate nutmeg always.

CHARTER PREP & STORAGE

Freeze unfrosted	Always. Cream cheese frosting breaks on thaw.
Naked cake	Cling + foil. 2 mo freezer. Thaw overnight in fridge.
Frosted cake	3 d fridge. Cover loosely — no cling on frosting.
Walnut butter	2 wk fridge, jar. Stir if oil separates.
Pressed carrot	3 d fridge, airtight. Drain before using.
Scaling	x2 = two pans, same time. 8" rounds: 30–35 min. Muffins: 20–24 min.

