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(& Drinks!)

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- Shopping Made Simple

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Conquer Any Hill

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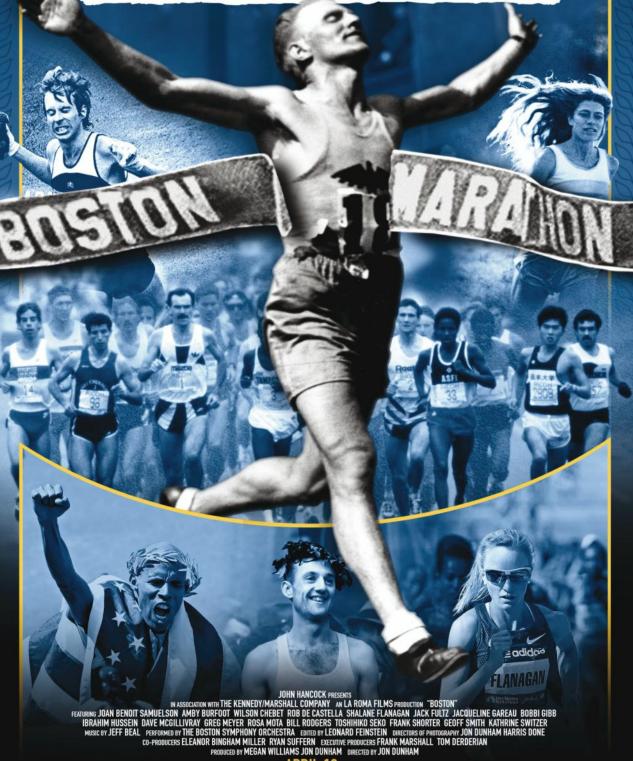
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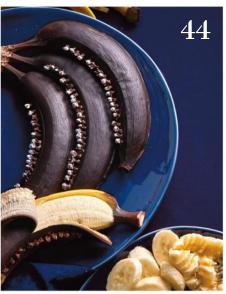
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SOLID FOOTING

We hit the muddy backcountry in the latest trail shoes to determine the best options for your off-road rambles.

BY JEFF DENGATE AND MARTYN SHORTEN, PH.D.





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Robyn O'Brien A food industry watchdog pairs miles with nutrition science.



"I would take the baby monitors into the garage and run when the boys were sleeping," Boller says, on her first treadmill miles as a beginner before transforming into an elite ultrarunning mom.



"Antarctica was hell—the snow conditions were super sloshy and there was risk of glacial sunburn," ultrarunner Jax Mariash says on completing the final 250-kilometer race of the challenge. "I was in shock that I had done it and surpassed every goal."

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Take Cover Rain shells that can handle everything from a drizzle to a downpour.



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HISTORIC COURSES

Looking for a bucket list finish? We've compiled 25 of the most iconic nonmarathon road races from around the country. Find your next challenge at runnersworld.com/iconic.



BACK TO YOUR BUDS

Our storytelling podcast, Human Race, returns for season 3 in April. Catch up with two seasons of inspiring midrun listens on iTunes or at runnersworld .com/audio.



SLIM READS

Each week, readers share their inspiring weight-loss transformations in "How Running Changed Me." Read their stories or submit your own at runnersworld.com/changed.





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David Willey

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Jessica Ni Murphy

If you had to

eat only one

food for the

rest of your

life, what

would it be?

"If I'm being good

carrots. If I'm

letting myself go, pasta in all shapes

and sizes.

"Fried tofu. I eat it

Pizza. In fact.

thing I eat now!

"My mother's

lasagna. I know a lot of people think

their mom makes

is the real deal.

"Kale (just kidding).

Do as I say, not as I do."

stash in my desk

Molly O'Keefe Corcoran VP/PHRI ISHER

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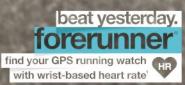
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some run for the podium finish, others for the free shirt









BOSTON, MASSACHUSETTS

RUNNER

Lauren Roth

THE EXPERIENCE

On the outskirts of the city's Back Bay neighborhood-home to the area's most popular specialty running shops and clubs—the intersection of Stuart and Berkeley Streets is only a few blocks southeast of the Boston Marathon finish line. "When running here, I feel a strong sense of calm," Roth says. "It's really the epicenter of Boston running."

PRO SIGHTINGS

Just a half mile north, you can connect with paths along the Charles River, a scenic long run destination and frequent haunt of elites like Meb Keflezighi leading up to Marathon Monday.

GEAR UP

Drop in to two of the city's most beloved running hubs: Marathon Sports and the **Boston Marathon** RunBase. Located less than a mile from each other on Boylston Street, both are stocked with local swag and host weekly group runs.

RACE NEARBY

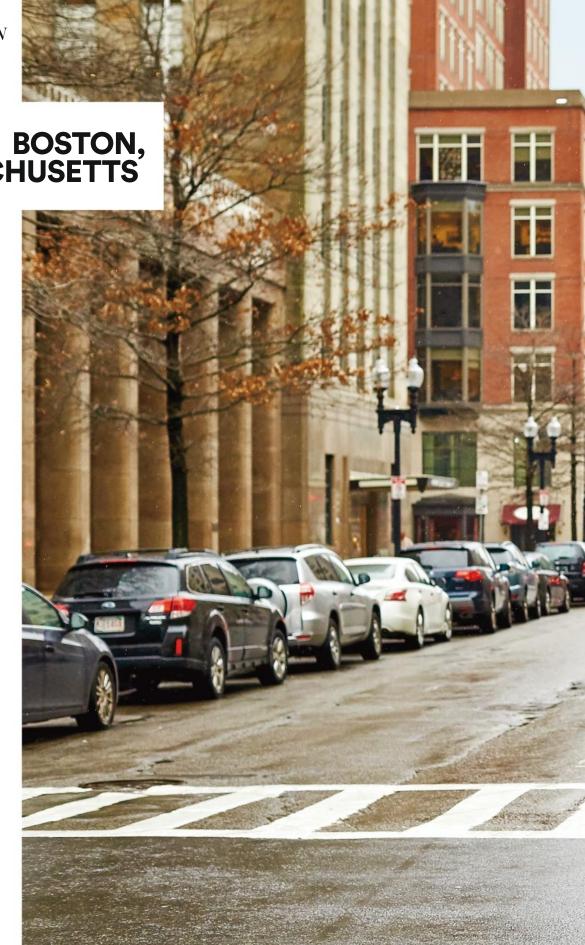
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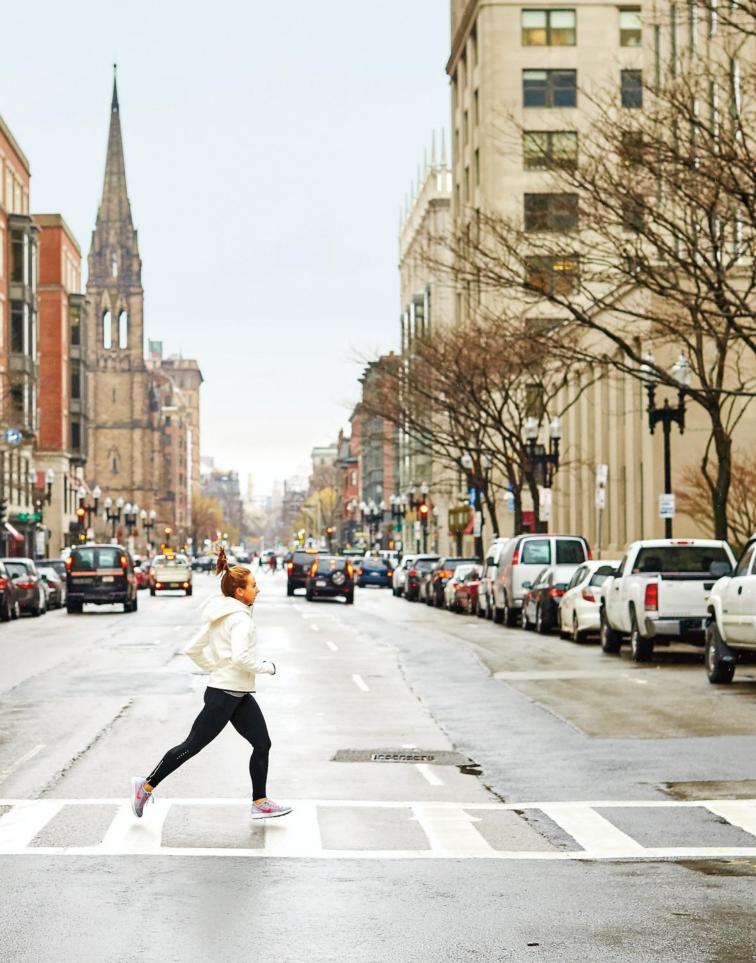
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PREPARING TO LAUNCH



ASIWROTE last month, I am embarking on a personal "moonshot" to qualify for the 2018 Boston Marathon by running 26.2 in under 3:30, improving my most recent time by, gulp, nine minutes. I've been trying to Bo for a decade, but this time, I hope, will be different. This time, I'll do everything right—with help from a team of coaches, scientists, and product designers at Nike who are working feverishly to break the two-hour marathon barrier. I will train harder and, more important, smarter than ever before. But here's the thing about moonshots: They come loaded with both promise and peril.

My quest began in November with a treadmill test at Nike HQ near Portland, Oregon, to gauge my aerobic fitness. Then, a few meetings and Skype calls with the Nike team. I emerged with a head full of data and concepts, plus two simple, central priorities. First, to improve my lactate threshold, or my highest sustainable running pace. Second, to do the minimum amount of training necessary over 16 weeks to get me fit enough to BQ while keeping my 49-year-old body injury-free.

In December, I did a pair of 2K "benchmark" runs that Brett Kirby, the head physiologist in the Nike Sports Research Lab, said were a simple barometer of my fitness and fatigue levels. I did

both on the same track on Saturday afternoons two weeks apart. In the first one, I ran the two kilometers (five laps, or a mile and a quarter) in 8:46, about 7:03-permile pace. Two weeks later, I ran the two kilometers in 8:22. It was frigid and windy, with a gauze-like layer of snow covering the track. I was the only one out there. I have to say, it felt a little bit epic. I had done something hard, and done it well. The takeaway: There's plenty of upside to improving my sustainable pace.

About a week later, I met two of my coaches in New York City, where they're based. More tests! Joe Holder, a Nike trainer, performance specialist, and health consultant, put me through a Functional Movement Screen to see how easily and athletically my body could execute a series of seven poses, stretches, squats, and lunges. The FMS would also reveal any functional limitations or asymmetries. Not that I needed a test for that. I walked in with recurring lower-back pain and chronically tight shoulders and hips. A perfect score is 21, and anything below 14 indicates a higher possible risk for injury. I scored a 13, mostly due to pain in my back during one move. "A bit of a red flag," Joe said. He also noticed an imbalance on my right side during lunges. The takeaway: My structural issues are a bit more serious than I had thought. Running a BQ will require plenty of nonrunning workouts to improve my flexibility.

But not yet! Next up: an easy four or five miles along the Hudson River with Julia Lucas, the Nike+ Run Club East Coast Head Coach. Julia wanted to check out my gait and see what my idea of "easy" was. On almost every run—especially training runs—I feel an irresistible urge to push the pace. Pushing equals fatigue, which equals progress. Right? To break 3:30, I'll need to average



Lunging-carefully!-under the eye of coach Lucas.



For a more detailed update on my moonshot marathon and on Nike's Breaking2 project, check out the Runner's World Show podcast.



I've settled on the Bayshore Marathon, May 27 in Traverse City, Michigan, for my BQ attempt. The course is beautiful, with rolling hills (I don't love pancakeflat courses), and it provides a homecourt advantage: I grew up in the state and am counting on my family showing up with moral support.





'benchmark'' run in December.

under eight minutes per mile. So I better not spend much time training slower than that. Right?

"This is the classic distance runner's mind-set," said Julia. "So much of training is about patience and holding back. I want you to end most of your runs thinking, I could go on much longer. I've got a marathon in my legs. We'll work you hard, don't worry. But your everyday runs are about not taking any energy from the well, just adding to it."

She instructed me to do my easy runs at 8:30-per-mile pace, slower than I wanted to go. "We want to instill in your body that running can be an easy, fluid thing where there's no element of *push*. Your easy pace should feel like you're letting it happen instead of making it happen."

THE NEXT DAY, back at home in Pennsylvania, I did my first workout designed specifically to improve my lactate threshold. It was three intervals of eight minutes each, run at 7:20-per-mile pace, just below my lactate turn point of 7:25. It was hard. I struggled to find 7:20 pace and hold it consistently-which I would need to get comfortable doing. The takeaway: Every run now has a specific purpose. To do any of them well, I have to approach all of them properly. If I run my easy runs harder than necessary, I won't be able to do my hard runs as hard as necessary. So I no longer go out for a run to just clear my head or break a sweat or catch up with friends (although I still get those things as side benefits). It's a different mind-set. This is what it means to train smarter.

The following Sunday, I was warming up on our back patio

before heading out on a 12-miler. While doing the last of 10 lungesthe same move that revealed an imbalance during my FMS—I felt a ripping sensation in my right hip flexor, as though two pieces of Velcro had been pulled apart. I yelled and hobbled inside. My wife and daughter said, "What happened?" I texted Julia, who called off the 12-miler and told me to ice, rest, and see a physical therapist ASAP. Instead of capping off my first official week of training with my longest run since October, I was on the shelf. This moonshot was going to be more of a tightrope walk than I had realized.

Once the pain died down, I put myself at the mercy of Rosemarie Rotenberger, a runner-trusted orthopedic massage therapist here in the Lehigh Valley. "She will find the problem and fix it," a colleague told me. "But it won't be pleasant."

After I'd spent half an hour on her table, Rosemarie told me she didn't think anything was torn, but that both my glutes and at least one quad muscle were "off." As in, not firing properly, or at all, which required other muscles to overcompensate. Thus the lower-back pain, as well as my overworked, piano-wire-tight hip flexors. "At least you're dysfunctional in a symmetrical way," Rosemarie said. The takeaway: I'm not doing my tight hips and glutes any favors by sitting as much as I doin the car, at work, then at dinner. I need to stand more, and work weekly massage therapy into my routine to keep my problem areas healthy.

After a perilous week, I got back on track with a couple of four-mile test runs. Then, on the first Sunday of February, exactly two weeks after my hip incident, I went out for an eight-mile easy run. Hear that? Easy. Although this workout could be seen as a step backward (I might've been up to 14 or 15 miles by now), it felt like progress. I finally found some flow. What I had been struggling with—finding the right pace, holding it, feeling it, embracing this workout's precise purpose—was no longer a struggle. There were no issues with my hip. I ran 8:30s like clockwork. I had done something easy, and done it well. I've got a long way to go, but things look promising.

DAVID WILLEY

EDITOR-IN-CHIEF @DWilleyRW





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THE INBOX

LISTEN UP

I never thought a podcast about running could bring me to tears multiple times, but Human Race manages it. Each episode tackles one particular story about running, runners, and how this sport affects our lives in so many ways. It's a podcast I can't wait to talk about with friends.

STARTING OVER

I just wanted to express gratitude for the articles and words of advice in each issue. After 24 years, I recently started running again as a positive outlet for the pain I was going through. Last spring I tried to take my own life. No one knew or guessed. I lived in silent isolation. I turned to running at my brother's insistence. He raved about the emotional and mental benefits, practically begging me to get started. So I started slow and have moved up to regular runs of three to five miles. I feel a sense of peace after each run, like I am finally in control of my life. I run to a fresh start. Your magazine has been a vital part of that process. Thank you so much! STEVEN J., VIA EMAIL

TO BO OR NOT TO BO

All the best in your journey to qualify for Boston, David Willey! ("Three Rabbits and a Guinea Pig," March.) Obviously you have the best resources and advice available, but if I can just add my favorite: Visualize the last .2 mile of the race each night—who will be there and most important, what time your watch will say. The body does what the mind believes.

Send comments about *Runner's World* to letters@runnersworld.com.

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1,037 photos snapped at the RW studio



THE COVER

Cover model Stefanie Corgel, 26, fell in love with running at an early age, logging miles on Manhattan Beach near her Los Angeles home. She finished her first 10K at 8 years old but found that her athletic talents were better suited to the basketball court. She played point guard for UC Santa Barbara and later Cal State Monterey Bay, graduating in 2013 with a kinesiology degree. In 2014, she moved overseas to play hoops professionally in La Spezia, Italy, using running to cross-train. "It made me a stronger. better athlete on the court," she says. "I probably had some of the best endurance out there." Now splitting time between Los Angeles and Portland, Oregon, Corgel is a strength and fitness coach and a trail runner through Portland's Forest Park.

THE WRAP

The exhaustive effort to find the best packaged foods for runners (page 54) was led by Ontariobased dietitian Matthew Kadey, M.S., R.D. He scrutinized hundreds of nutrition labels to find the standouts on the shelf. After sampling scores of them (that's the RW studio fridge, below), the cyclist and snowshoe runner settled on a pantry staple as his favorite. "I'd happily meet my maker with granola," he says.



PHOTOGRAPHS BY SAM ROBLES (CORGEL); MITCH MANDEL (FRIDGE, CAMERA); ANDRII GORULKO/ALAMY (SHOPPING CART); ANDREW TWORT/ALAMY (CUTLERY)

THE STATS

The 1,000-mile Iditarod trail in Alaska hosts multiple races each year, including the famous one for sled-dog teams and another just for ultrarunners (page 76). Here's how the canines and humans compare.

	VS.	×
8 MPH	AVERAGE SPEED	4 MPH
100	AVERAGE DAILY MILES	43
12,000	DAILY CALORIES BURNED	7,000+
734 (PART OF 71 SLED TEAMS)	2016 FINISHERS	4
REEF & TIDE, LEAD DOGS ON DALLAS SEAVEY'S SLED TEAM	LAST YEAR'S CHAMPION	TIM HEWITT
8 DAYS, 11 HOURS, 20 MINUTES (NEW COURSE RECORD)	FINISH TIME	19 DAYS, 9 HOURS, 38 MINUTES (NEW COURSE RECORD)

MIRINDA CARFRAE

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BEVERAGE OF MIRINDA CARFRAE





THE SWAG

Always on the hunt for the coolest running gear around, the hosts of *Super Secret Mystery Meeting* have been rocking the latest *Runner's World* apparel around the office: Ali in the "Running Is a Natural High" sweatshirt, a remake of a product we sold in the 1970s, and Hannah in the "I Love Running" sweatshirt, based on a vintage shirt we designed in 1987.



THE LATEST

Although Roseann Sdoia lost her right leg above the knee after the second explosion at the 2013 Boston Marathon, she gained a lifelong partner—the firefighter who helped save her life, Mike Materia. The duo started dating in the months after the tragedy and in December announced they are getting married. Runner's World recounted Sdoia's recovery, and the tight relationship she formed with the three strangers who rescued her, in writer Steve Friedman's feature "Blown Together" (May 2014, runnersworld.com/selects). The couple plans to wed this fall.

THE QUESTION

WHAT POSTRACE FOOD IS YOUR BIGGEST GUILTY PLEASURE?



Muffins! Chocolate muffins.

-@SuccessMalefa



Definitely jumping on the greasy burger train with a beer!
—@amy_danielle6



Corned beef hash and oatmeal with raisins.

-@kermitthompson



I never feel guilty, just less hungry after the doughnuts. —@DavidPatch5



Catch the latest episodes of SSMM with editors Ali Nolan and Hannah McGoldrick on the Runner's World YouTube channel. Buy their gear at runnersworld.com/shop.



Beaver Creek, Colorado: May 18–21



Hilton Head, South Carolina: September 6–10



Mission Hills, California: November 9–12

THE BLISS

Why go to a Runner's World Getaway? We can think of a few reasons: stunning scenery, nutritious meals, pampering spa treatments, and a chance to rub elbows with editors and Olympic athletes. Gather your girlfriends and (r)unwind with us. Here's where we're going in 2017.

Learn more and sign up at runnersworld.com/getaway.

THE FEAT

Gear Editor and devoted shoe geek Jeff Dengate has pledged to run at least three miles every day of 2017. The catch? He's doing it while testing a different model on every run. That's 365 pairs of running shoes over 365 days. Talk about a dream job! You can follow his daily exploits—with insights about each pair—on his Instagram feed, @dengaterade.





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HUMAN(*)RACE

NEWS, TRENDS, and REGULAR RUNNERS doing AMAZING THINGS

STREET STYLE

> CURATOR OF CUTE

For years Amanda
Hart, 38, ran inside on
a treadmill, avoiding
the crowded streets
around her Brooklyn
home. Then one day
in 2010, during a long
'mill run, Hart tuned
into the New York City
Marathon. The camera
focused on a blond
woman—Shalane

"I was drawn
to these Athleta
tights despite the color.
I appreciate the geometric prints mixed in with
the floral, and they
are muted enough
that I still feel like
myself."

"The Bulldog Running Club is a joke. My friend Tony, who plans routes in the city, sent a text about a run he'd planned.

In it, the word bulls--autocorrected to bulldog. Now we call his runs bulldog runs. I put it on a sweatshirt."

"When I turned 13, my mom got me these silver bangles. I also have this leather wrap by Smadar Eliasaf, an Israeli designer, and the Marabana bracelet I got in Cuba when I ran the half marathon. It reminds me it's warm somewhere."

PHOTOGRAPHS BY PAULSTA WONG

APRIL 2017 RUNNER'S WORLD 17



Flanagan, wearing high, white compression socks. "I thought, Wait a minute. People who run outside get to look like that?" says Hart, the creative director for Engineered for Motion Menswear. a luxury men's sportswear design company. "I was in love with Shalane's strength and style. I knew that when she put those socks on before the race, she must've felt fast."

Inspired, Hart hit the streets, cultivating her own running style and embedding herself into the NYC running scene. Today, she is an eight-time marathoner, a member of NYC BridgeRunners, and a Nike Pacer. In these groups, she's the runstyle ambassador and will often snap Instagram photos of worthy outfits accompanied by the label #runcute (see her snaps at right).

"What you wear empowers you to go farther," she says. "And sometimes what's most important is how you feel. If you are confident—if you feel fearless in what you are wearing—then you are going to run your best."

—ALI NOLAN



@MISS.HART_ EXPLAINS WHAT'S TRENDING

1

"Rosie's braid in line with a Victoria's Secret sports bra is the epitome of femininity and power."

2

"There is something really visually pleasing about Tracy's all-black look. Long sleeves, teeny shorts, and high compression socks—it's a perfect balance. She's also added a pop of volt on her sleeve and in her shoes." 3

"Mike's cloud tights, paired with other shades of blue, are a brave choice! He is fearless."

4

"The contrast of the bright cobalt blue tights and vibrant Pantone green creates the perfect pairing for 2017."

5

"Jess and Kim look effortlessly cool in drape muscle tanks. Kim's got an endless collection of shades and is always blinged out with handmade jewelry. Check out the rainbow choker. It's a gift made for her by her granddaughter."

6

"Jess's 'fro is a staple in the NYC running scene. Here she pairs it with her Girls Run NYC top."

7

"Socks and shoes can elevate a look. A pop of neon orange with a muted shoe made an otherwise all-black outfit stand out." 8

"You can't go wrong with black and white. Adam and Marquita are the best-dressed running couple in New York."

9

"Patterns on patterns are a big deal right now. The graduated dots, checkered arm sleeve, and hint of stripes underneath are exactly what this craze is."

"BEAUTIFUL"

- Wayne S., Jacksonville, FL

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HOME RUN

As the Chicago Cubs bask in their World Series victory, front-office employees pursue their own athletic achievements.

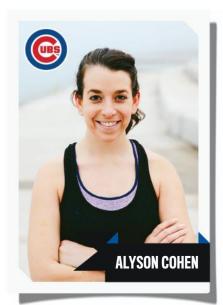
Spring training for the Cubs isn't just for the players. The front office runs officially begin in April.

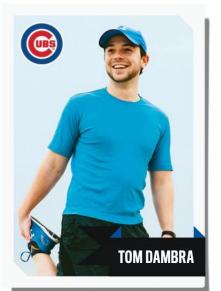
For dedicated fans of the Chicago Cubs. the corner of North Clark Street and West Addison Street, where Wrigley Field stands, is the ultimate destination—especially after the team ended a 108-year championship drought in 2016. But for runners like Kathleen Frost and Alvson Cohen, it's just the starting line. The two work for the

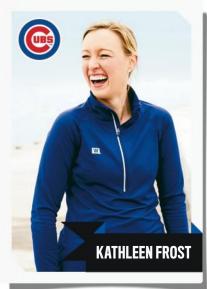
Cubs' front office.
As part of the organization's internal running club, they meet near the field at 5:30 p.m. sharp twice a week, then head east to the Chicago Lakefront Trail and back in a three- to seven-mile loop.

Benefits coordinator Jorge Quezada started the club in 2014 as part of the company's wellness program. Now, as many as 45 Cubbies take part and score swag for racking up miles. Along the way, they can participate in races including April's Race to Wrigley 5K, which passes through the ballpark—free of charge.

Members say team spirit motivates them far more than material rewards do. This past fall, the







ALYSON COHEN

POSITION Public relations coordinator **SEASONS WITH THE TEAM 2** 2017 RUNNING GOAL To stay in shape and keep active PERSONAL BEST "My 10K finish in 2016 in 57:33 is one of my faster times." BIG LEAGUE CHEW "On my long runs, I always chew gum-Orbit Sweetmint flavor. It keeps me focused." POWER PLAY "I have some of our player walk-up songs on my running playlist. One I'm kind of embarrassed to say is 'Bad Blood' from Taylor Swift—that was [first baseman] Anthony Rizzo's. Jake Arrieta [pitcher] had 'Lean On' from Major Lazer that I really like, too."

TOM DAMBRA

25

POSITION Software engineer **SEASONS WITH THE TEAM 3.5** 2017 RUNNING GOAL Race to Wrigley PERSONAL BEST "I ran 4:27:07 in Chicago Marathon 2016." **KEEPING STATS** "I need our running club's accountability. I'm definitely one of those people who can easily talk themselves out of working out." BREAKING THE CURSE "[In 2015], the marathon did not go as planned. I didn't get the time I wanted. My legs cramped up around mile 14. Last year, I hit my goal time, the weather was great, and the Cubs won the night before."

KATHLEEN FROST

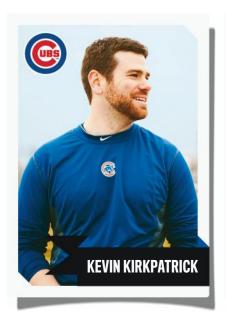
POSITION Sourcing and procurement analyst **SEASONS WITH THE TEAM 2** 2017 RUNNING GOAL Stay accountable with the running club PERSONAL BEST "Milwaukee Lakefront Marathon 2015 in 3:59:03." SPORTS DYNASTY "My mom had run probably eight marathons before I started running. I did my first marathon with her—in total, I've done a marathon and a 50K with my mom." HILL TRAINING "I had to walk up to the 500 level through the ramps the day after I ran a marathon in 2015. We were setting up for the playoff game." Cubs' postseason run coincided with the Chicago Marathon on October 9. "We had games on Friday and Saturday nights and then the marathon was Sunday—it was a complete whirlwind." says Frost, who ran her fifth 26.2 last year. Cohen, who finished her first, agreed: "We were all riding this high in terms of being part of that magical

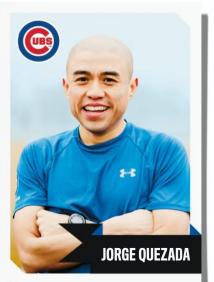
run and then literally being part of the run the next day."

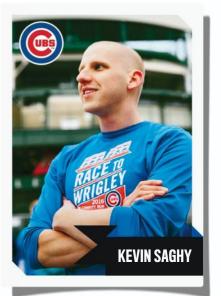
Some of the Cubs runners have marathon ambitions again in 2017, while others aim to maintain a regular running routine. Regardless of their goals, they all agree: They'd gladly forgo them if it meant a World Series repeat for the team.

-CINDY KUZMA









KEVIN KIRKPATRICK 33

POSITION Manager, corporate partner sales operations
SEASONS WITH THE TEAM 4

2017 RUNNING GOAL Run a marathon in a new city

PERSONAL BEST "Big Sur in 2015. It wasn't my fastest, but it was my biggest challenge. I ran a 4:41."
PINCH RUNNER "If I was hurt and couldn't run, I would pick [infielder] Javier Báez to take my place. He has a lot of h

MARATHON WALL OR OUTFIELD WALL? "I hit the wall pretty early once. I would say that kind of pain for 13 miles is worse than running into a brick wall."

JORGE QUEZADA

POSITION Benefits coordinator (and running-club leader) **SEASONS WITH THE TEAM 10** 2017 RUNNING GOAL Finish his first Chicago Marathon in October PERSONAL BEST 19:14 in the 5K in 2016. "I ran faster times when I was younger!" **OUT OF RETIREMENT** "I ran in junior high and high school and for fun in college, but I stopped once I graduated. When we created this club, the fire I used to have reignited. I lost about 30 pounds." ONE GAME AT A TIME "I don't know what to expect with a marathon, but I know it's going to be a long season like in baseball."

KEVIN SAGHY

POSITION Assistant director, communications
SEASONS WITH THE TEAM 7
2017 RUNNING 60AL "Avoid Dad bod" (his first child was born in January)
PERSONAL BEST In 2016, "I ran 3:57:56 at the Chicago Marathon. It was my second time breaking four hours."
ON DECK "The night before the marathon, we didn't leave the ballpark until after midnight, which is not typically in our playbook."

GAME FACE "During a race, I force myself to smile. It's paid off the last couple times. I hit my goal, and I look better in the pictures."



The Newbie Chronicles BY KATHRYN ARNOLD



THAT MAGIC MOMENT

When crossing your first finish line is the stuff of dreams

he arrival of a day long awaited is often surreal: When the appointed hour descends, it can feel as though your anticipatory visions have become tangible, materializing like ghosts made flesh. And this transition from theoretical to actual is doubly surreal if your special day involves, say, jogging through Norway with a half-dozen Buzz Lightyears. ¶ What I mean to say is that, after training for months and imagining dozens of outcomes—I trip and break both wrists! I show up on the wrong day and accidentally do the marathon! I have some kind of cardiac episode and die!—in January, I ran the Walt Disney World 5K through Epcot, where tiny simulacra of the world's most aesthetically replicable country villages make for an inspiring, if delightfully weird, backdrop. It was my first 5K, and

it was strange and wonderful—an extraordinary, moving, educational experience. And, cherry on top, I managed to achieve my two goals: Do the thing in less than 45 minutes, and (almost) run the whole damn way. ¶ Disney World is in Florida, which is pretty far from New York; I failed to take this fully into account when booking my flight, which put me in Orlando at 9 p.m. the night before the race. After a shuttle to the Animal Kingdom Lodge—where zebras roam beneath your balcony—a lengthy

check-in, and conducting my bedtime toilette, it was midnight. Wired, I fell asleep at 2 a.m. The race started at 6; I was due on the shuttle (Disney loves shuttles) to the starting line by 4. Whoops.

As in many races, the participants were grouped by speed; I was in the very last one, known as—no joke—Corral F. The other foot-draggers and I set off around 6:45 a.m., well after whoever won the race had already done so. It was still dark when we began. In my excitement and adrenal overload, I caught myself, about a half-dozen times, overextending, breaking from my conservative trudge into spirited sprints. Slow down, I'd think, and then I would.

I stayed attuned to the rhythm of my body, a melody of breaths accompanied by percussive footfalls. *You got this,* I'd think every few steps. But triumph can't exist without strife, and so it was that somewhere around *petite* France, I felt a ripping, cramping sensation in my abdomen and realized I was developing a nasty stitch. I knew the best course of action was to stop and stretch—but with an eye on my finish time, I refused to do so.

I'll confess something: I was pissed. This was, after all that arduous training, supposed to be the goal I could ace with no problem. And now here I was, watching my dumb innards mess everything up right when things were going well. I'm not an idiot; I know that ignoring pain is a great way to invite more pain. So while I couldn't bring myself to stretch the thing out, I could see the rationale for a quick interlude of speedwalking, if that's what was necessary to get me across the finish line in the time I was aiming for. My two race goals were suddenly at odds, and the time goal won out. And so it was that I walked, briskly, from France to the United Kingdom, which is not as far as it sounds.

I won't lie: It occurred to me then that nobody would know if I walked the rest of the way, letting that cramp fully work itself out, and letting my tired old Corral F bones rest. But then I thought, Did you really come all the way to Florida—nay, to the U.K.!—to phone this thing in? What's the point of working hard for months only to wuss out in the moment of truth?

And so I picked up my pace—but not too much!—and greeted each mile marker with the wild joy of a soldier coming home to his sweetheart. When I saw the finish line, I finally let myself think the jinx-y thing I'd been avoiding thinking all day: You started this running thing so out of shape you could barely move, and look at you now. Well done, me. Kudos, Katie. Hashtag blessed.

Sure, this might seem like a lot of self-congratulation for a 5K. Well, as a corporate motivational poster once told me, it's not the length of the race that matters, but how you run it. And I ran mine with vigor and determination. I ran it on meager, fitful sleep, surrounded by participants of vastly varying levels of seriousness. I achieved one goal: In my elation I failed to note my exact time, which figures, but based on the "See you soon" text I sent my sleeping boyfriend, I finished it in about 40 minutes, definitely under my hoped-for 45 minutes. And mostly I achieved the other, running (mostly) the whole way. Afterward, I even sprinted for the shuttle (seriously, shuttling is like a religion at Disney) back to the hotel.

Once in my room, my Pluto medal still around my neck, I stood on the balcony and bowed in victory to a bored-looking okapi. I had done it. Yes, I would fall asleep on a boat ride later that day—for 20 minutes—and yes, the next two days traipsing around Disney World would seize up my calf muscles and make my hips feel like they'd been stuck in a vise; and yes, the Bloody Mary and omelet I was about to order would wind up costing me \$40.

But it didn't matter. I had done a magical thing, in the most magical place on earth. I had shuttled and trudged my way to glory, country by country. Corral F? Yeah, the F stands for feat—as in, a tremendous one.

Kathryn Arnold is a writer in New York City. She's written for *Time*, *New York*, *Slate*, and *Wired*, and is the author of the novel *Bright Before Us* (2011). She is currently plotting her next move.



He's been around the block a few times—and he's got answers.



My boyfriend and I are "The Tortoise and the Hare." I like long, slow runs and he prefers sprints. How can we be happy running together?

—Morgan H., Salt Lake City. UT

I hope your boyfriend doesn't taunt you with his speed, like the hare in the fable. (If he does, I'll refer you to a dating advice columnist.) But here are some possible solutions. You could run together on a track or short loop so that you two see each other every lap. Or your beau could sprint away from you and then turn to sprint back, pausing to "recover" with you at your slower pace. Finally, you might consider taking a hike together. Hiking is terrific exercise. It may not be running, but, hey—it beats the couch.

I like to pick up my pace in the final quarter mile of a race to finish strong. I pass a ton of people. Is this rude or part of racing?

—Brittany T.,
Paducah, KY

The desire to finish strong is a natural one, and passing people is what racing is all about. What matters is how and when you do it. First off, be considerate-if you're weaving and brushing past people, clipping heels and bumping elbows just to shave a few seconds off your time, that is definitely not cool. Or safe. Plus, you look foolish. Second, if you routinely have that much energy in the final few hundred yards of a race, well...something's not right. Sandbagging early on and then sprinting around "a ton of people" in the final quarter-mile isn't racing. It's showboating.

Have a question for Miles? Email askmiles@ runnersworld.com and follow @askmiles on Twitter.



If you could run with anybody living or dead, who would it be?

- ► Bono! Because my running partners and I solve the world's problems on long runs. @Goddess17AA
- ► Hector of Troy. I'd encourage him to keep running rather than face Achilles. @_26point2_
- My late grandpa. He was a speedster when he was younger. @erikhash

ILLUSTRATIONS BY ANDY REMENTER





SHOW OFF SIN CITY

A running-tour operator helps endorphin seekers hit the jackpot in Vegas.

For Jimmy Edwards, 42, Las Vegas is more than casinos and clubs. After reading an article about running tours, the sub-three marathoner wanted to showcase the active side of Sin City. He took a gamble, put his career as a phys-ed teacher aside, and opened Las Vegas Running Tours in 2011. He now leads runners on excursions ranging from \$35 to \$159, depending on the location and duration of the tour. "People ask about the pace," says Edwards. "I tell them to not worry. It's all about seeing the sights." -T.R. WITCHER









1/SUNRISE ON THE STRIP

Edwards leads
4.2-mile tours from
the Bellagio (where
music blares even
at 6:30 a.m.) to
the "Welcome to
Fabulous Las Vegas"
sign and back. "It
would be nice to run
under neon lights
at night, but in the
morning, there aren't
the crowds and you
have sidewalks to
yourself," he says.

2/HISTORY LESSONS

Edwards teaches runners about the city's past by including iconic landmarks like Block 16 on his tours. "This was where railroad and dam workers came for drinking and gambling —when both were illegalas well as prostitution, which was legal until the 1940s," he says. "It's the original Sin City."

3/OFF-ROAD ADVENTURES

Runners looking for a break from the city enjoy Edwards's run at the Historic Railroad Trail at Lake Mead. "Most people have never been there," he says. "It's the perfect place to spot bighorn sheep, hawks, and lizards." The 8.5-mile route includes five railroad tunnel passages that were used to convey Hoover Dam supplies in the 1930s.

4/GET HITCHED

If you're feeling romantic, Edwards, who is an ordained minister, can help you tie the knot. His "Love to Run...Run to Love" package includes a 5K with a midway vow exchange at the Vegas sign. Newlyweds get photos, flowers, and a Gatorade toast. "It's all happening here, baby," he says.







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CAM AND JESSICA WATERS BEFORE 265 LB. (CAM). 187 LB. (JESSICA) **TODAY** 190 LB. (CAM),

LEAN **ON ME**

This Georgia couple makes weight loss a team effort.

Growing up, Cam Waters was an athlete. He played baseball, lifted weights, and ran a half marathon by age 23. But in 2011, a ruptured disk in his spine from his college ball days landed him on the operating table. He was forced to relearn how to walk and within four years had gained 73 pounds. "I was depressed and in constant pain," says the 39-year-old sales executive. "But after the second surgery, I knew I had to get healthy for my family." He wasn't sure running was possible, but he got on the treadmill to try. Three months later, he ran a half marathon-in 1:34:58! In his first marathon a year later, he clocked a Boston-qualifying 3:08:24. After his wife, Jessica, 32, gave birth to their fourth child in February 2016, she started running, too. This March, she'll run the Berry Half Marathon; Cam is training for the Snickers Marathon in Albany, Georgia, and for Boston 2018. —DANIELLE ZICKL

SHE SAYS

"The baby weight was being stubborn, so I started running. I couldn't even make it through a mile at first. Cam inspired me to keep going."

HOW THEY GET IT DONE TOGETHER

FIRST STEPS

"My first half mile took me 12 minutes. My feet were uncoordinated. But the next day, I went a

little bit farther."

FAMILY MEALS

"One night I made mashed potatoes. Cam said, 'I can't eat that.' I was frustrated and thought I'd have to make two meals every night-one for me and the kids, and

HE SAYS

"The kids love chicken nuggets, so making the switch was hard. Now we all eat vegetables and grilled chicken."

one for Cam."

CHILDCARE HACK

HE SAYS

"On Saturday mornings, when I do my long runs, I just go out and cover the distance, then call Jessica to come pick me up."

SHE SAYS

"When I pick him up, he gets in the driver's seat and ferries the kids around while I do my run. We just make it









Remy's World BY MARK REMY



RUNNING ERRANDS

Doing them on foot is surprisingly satisfying—if you plan accordingly.

P

aper bags are a bad idea. Let me state that right up front. ¶ You learn this pretty quickly the first time you try to run home with a paper bag full of groceries. Unless you've bought nothing but marshmallows and cotton candy—and if that's your whole shopping list, you've got bigger problems—your bag's contents will, sooner or later, work their way through the paper and onto the ground. Probably in front of a bunch of bystanders who already thought you were weird, mincing down the sidewalk in your short shorts, cradling a large paper bag in your arm. ¶ Other than that, running to and from the supermarket can be fun. This is something I've learned over the past few months, as I've discovered the joys of getting things done on foot. In fact, I've come to use short, easy

runs around town to accomplish all sorts of tasks. ¶ On one typical outing, I ran to the post office to buy stamps. Then (upon seeing the line was way too long) to a smaller location nearby. Then (upon learning that that location didn't accept credit cards) some distance to a supermarket that I knew sold stamps. (Success!) Then to another store, to shop for cereal bowls. (No luck.) Then to the library to pick up some kid-friendly audiobooks for a road trip. (*Encyclopedia Brown!*) Then, finally, home. ¶ Other times I've picked up prescriptions at the pharmacy, bought books, mailed packages, dropped off pants to be mended, checked my mailbox at the UPS Store, and on and on and on—all while running. ¶ The more that you do your errands this way, the more normal it seems, and the more normal it seems, the more you do it. It turns out to be a surprisingly satisfying way to get things done—and it's changed

how I think about running.

Per usual when I discover a new way to do something, I feel as if I'm the first one ever to think of this. I'm not, of course. What was Pheidippides's legendary run from Marathon to Athens circa 490 B.C., after all, but a longer-than-usual errands run?

TO DO:

- •Pick up tunic at cleaners
- •Brunch with Linda
- •Announce Greek victory over Persia
- Collapse

More recently, there was the toilet paper woman. I can't recall her name—this was several years ago in the runnersworld.com forums—but I remember her photo. It showed a smiling young woman, in running gear, standing outside a big-box store. On her back was an enormous bundle of toilet paper. A 24-pack, at least. She had rigged the thing up with ductape straps and was carrying it like a backpack for the run home.

At least she'd be prepared if she had to make a pit stop.

Whether it's buying toilet paper or mailing a package, crossing items off your to-do list feels even more rewarding when you do it during a run. I can't say why. Maybe from the heightened sense of productivity, a two-birds-one-stone thing? The virtuous feeling you get by leaving the car at home? Probably it's both of those things. Part of it too, I think, is novelty. We've conditioned ourselves to see running as a pastime, a sport, an "interest." Seeing it instead as a mode of transportation—not as a thing to be done but as a way to get things done-shakes everything up.

There are a few unexpected benefits, as well. For one, my errand runs have given me a deeper appreciation of my "regular" runs—i.e., the ones that don't involve an agenda and a backpack full of groceries and library books. Running without that weight—literal and figurative—makes your regular runs feel newly, well, light.

For another, my weekly mileage has gotten a little boost. Even on rest days,

I might run out to the supermarket for a few things. These runs are so short, they hardly seem like runs at all. But the miles add up. And I always come home with the same renewed energy that I get from "normal" runs.

Plus, my form has become smoother. Less bouncy. Running with a carton of eggs in your backpack will do that.

I understand that not everyone is in a position to indulge in this sort of thing. I live in Portland, Oregon, a relatively dense and walkable place where even in the outer neighborhoods, like ours, you're never very far from a supermarket, a post office, a library, or a drug store. In the course of a single threemile run I can hit all of those places and more if need be. If I lived in rural Montana, well... let's just say I've never been keen to try an ultra.

If your neighborhood is conducive to running errands and you're eager to give it a whirl, here are a few tips.

- •Use a backpack with a comfortable waist belt and, ideally, a way to secure the straps across your chest. The idea is to keep things snug but not tight.
- •A gallon of milk weighs about 81/2 pounds. Plan accordingly.
- •If you're picking up bottles of prescription pills, don't carry them home in your hands unless you don't mind sounding like a cocktail shaker.
- •Let go of any notion that you have to track the mileage. The point isn't to run a certain distance at a certain pace, but simply to get things done.
- •Be prepared for funny looks. People aren't used to seeing someone in spandex tights and a backpack next to them in the frozen foods aisle. (Unless you live in Portland, in which case the person next to you is likely also wearing tights and a backpack.)

And then, of course, there's the paper bag thing. I learned it the hard way during a run that included an unplanned stop for groceries. I didn't have my backpack that day, so I ran clutching a full paper bag up against my chest, like a football. I was a half mile from home when two cans of beans finally worked their way through the bottom of the bag, clattering to the street.

I couldn't stop kicking myself. I knew I should've gone with the marshmallows. M

Mark Remy is a Runner's World writer at large and the mastermind of dumbrunner.com. For more, go to runnersworld.com/remysworld.



Professional ultrarunner Jax Mariash made history in 2016, becoming the first woman—and just the eighth person ever—to complete the 4 Deserts Grand Slam Plus in a single calendar year. Each run covers roughly 150 miles over seven days across deserts in China, Namibia, Chile (shown below), Sri Lanka, and Antarctica. - KIT FOX



MILES COMPLETED OVER 35 DAYS ON FOUR CONTINENTS

TOENAILS LOST DURING HER 2.644 TRAINING AND RACING MILES IN 2016

SPECIES OF WILD ANIMALS SHE SAW **DURING ALL FIVE RACES, INCLUDING PENGUINS** AND A BLUE WHALE IN ANTARCTICA, HYENAS IN NAMIBIA, AND CAMELS IN CHINA

Total airplane miles accrued to arrive at the starting lines

THE FEMALE PODIUM SLOT MARIASH TOOK IN FOUR OF THE FIVE RACES. SHE WAS SECOND IN THE RUN ACROSS SRI LANKA.

Money spent to accomplish the feat, with some help from sponsors. This included a total of \$30 for campsite toilet paper.

Pounds Mariash lost during the races, which is one reason, she says, she replenished with beer at each finish.

O

TEMPERATURE (FAHRENHEIT) AT WHICH MARIASH'S SHOES MELTED DURING THE GOBI RUN. SHE FINISHED WITH SEVERE BLISTERS.

ESTIMATED TIMES IN A ROW SHE LISTENED TO SALT-N-PEPA'S "SHOOP" ACROSS THE SAHARA TO STAY MOTIVATED

CELEBRATORY BEERS SHE CON-SUMED AFTER COMPLETING THE GOBI MARCH. **SHE SPENT THE HOURS AFTER** THAT SINGING KARAOKE WITH FELLOW FINISHERS.



PROMOTION CALL FOR ENTRIES



ARE YOU COVER READY?





PUDDLE JUMPING

If you live in a city like Hilo, Hawaii, which sees an average of 157 inches of rain per year, you know how to deal with running in the rain. (Or you don't care. You live in Hawaii!) You know to rotate which shoes you wear, and you stuff the wet ones postrun with newspaper to speed the drying. You probably have a rotation of jackets and vests for different combinations of temperature and precipitation. (No? See page 51 for our picks.) You'd never let a surprise shower (or a torrential downpour) derail your planned long run. If, however, your current forecast has you worried, our coach Jeff Galloway-resident of Atlanta, 50 inches of rain per year—has tips on how to deal with all kinds of crazy weather (see page 40).



BE SELFIE-AWARE

Social media can motivate, but it can also encourage habits that keep you from running your best.

By Cindy Kuzma

FALSE POLITICAL HEADLINES have fooled many in the social-media age, and "alternative facts" aren't limited to partisan topics. Any blogger or influencer can post, tweet, or snap training advice that seems legit—but is it? "You can put out some really crappy information and get it perpetuated," says Janet Hamilton, an Atlanta-based exercise physiologist and coach.

While inaccuracies spread more swiftly than ever, you can also use the internet to vet your sources. "Take that extra step and ask, 'Okay, where's this coming from?'" says Ryan Warrenburg, head coach for ZAP Fitness Coaching in North Carolina. "That's easier than it's been in the past, too."

Being a discerning consumer of online running information can prevent plateaus, overtraining, and injuries. Here, established experts Hamilton and Warrenburg lay down the truth about four misguided, social-media-fueled training trends.

#TRAININGFAIL Racing Every Run

Instagram posts stamped with the mileage and time sure look better with faster paces. However, without recovery days, your body never has a chance to grow stronger after hard workouts, Warrenburg says. Plus, relaxed-pace efforts build mitochondria. tiny organelles in your muscles that process fat and glucose into the energy you need to run, Hamilton says. They also strengthen tendons, bones, and slowtwitch fibers—the type of muscle that carries you beyond short sprints. **INSTEAD** Limit hard running to one or two days per week (with the hardest miles counting for only about 7 percent of your weekly total, Hamilton says). On other runs, you should be able to speak in full sentences with your running buddies, Warrenburg says. And if the pressure of going public

tempts you to pick up the pace, leave your watch at home or your training app closed on those days.

#TRAININGFAIL Entering Every Race

Bloggers and other influencers often receive free race entries in exchange for promotion, which explains their frequent participation. But marathons and halfs put enough stress on your body that racing more than a few each year ups injury risk, Warrenburg says. And to do your best, you need time to build mileage and taper beforehand, then recover afterward, Hamilton says. **INSTEAD** If you're aiming for your fastest time, cut back to two marathons per year with four to five months in between. Warrenburg says. Newer runners should stop at three half marathons per year, while those with more experience could do four, Hamilton says. Most runners can do shorter races





more frequently—a 10K about every eight weeks or a 5K every six weeks. You can toe the line more often if you use events as training runs, Warrenburg says. But that strategy won't work if you can't maintain control when you pin on a bib.

#trainingfail Midrun Selfies and Snaps

Posting a mid-easy-run pic may help you connect with the running community, Hamilton says. But pausing during tempo, race-pace, or long runs can interfere with gains. "The purpose of the workout is to maintain the intensity over an extended period of time," Warrenburg says. "If you're stopping in the middle, you're changing the dynamic." And then there's basic safety and etiquette: Slamming on the brakes to whip out your phone in a crowd can cause a pileup.

MSTEAD Save midrun documentation for easy days, double-check that the coast is clear before you stop, and ask others' permission before posting a group shot. "Just like in traffic, you want to respect the people around you," Hamilton says.

#irainingfall Hitting All the Group Workouts

November Project on Monday. A group track session on Tuesday. Spin class on Wednesday. A packed schedule guarantees an Insta feed full of #squadgoals photos. But if you keep it up, you'll soon be posting updates from the physical therapist's office. High-intensity workouts, even if they involve minimal or no running, don't count as easy, and going HAM daily beats you up and boosts your risk of injury

and illness, Hamilton says.

INSTEAD Use the motivating power of groups strategically. For things like track workouts, choose partners close to your fitness level, and finish feeling tired but not totally spent, advises Warrenburg.

Alternate hard workout days of all kinds with easy or rest days, Hamilton says. High-intensity cross-training can replace hard runs in the off-season, Warrenburg says, but in the final eight to 12 weeks before a goal event, focus on hard running workouts targeted to the distance you're racing.



ACTIVATE YOUR SPAM FILTER

"It's hard to tell the difference between sound advice and stuff that's a bit more fringe," says coach Ryan Warrenburg. These are clues that online training guidance comes from a trustworthy authority.

QUALIFICATIONS
Certifications from
organizations like the
RRCA or USATF mean
a coach takes the sport
seriously enough to
attend a weekend-long
workshop—but these
don't stand alone. Degrees in exercise science
or physiology, and/or
employment as a coach,
add credibility.

RESULTS

Look beyond personal records to find out about the runners this person has coached and how they've performed. "Just because coaches are gifted athletes with fast race times doesn't mean they understand what it takes to achieve those times," says coach Janet Hamilton.

BACKUP

If someone cites research in exercise science journals or the work of historically influential coaches—for example, Arthur Lydiard—that's better than if they're touting only their own methods and strategies (especially if those seem to oppose conventional wisdom, Warrenburg says).

NEXT LEVEL

COUCH TO 50K

How **Caroline Boller** became a standout ultrarunner—seemingly overnight.

By Erin Strout

AT DECEMBER'S Brazos Bend 50-miler in Texas. Caroline Boller, 42. beat everyone-including the men. Her time (5:48:01) was 26 minutes under the previous women's North American 50mile trail race record. And all this happened within four years of Boller starting to run consistently. "I still think of myself as a slightly dumpy, inactive person," she says.

At age 38, the mother of two boys wanted to shed a few pounds. She'd never been an athlete, but her husband was a runner. She began logging miles on their home treadmill. A few months later, Boller took to the roads and trails near her home in California.

Her first results were mixed: She bonked at the Santa Rosa Marathon in August 2013, finishing in 3:53:35; a few months later, she was fifth at San Francisco's North Face Endurance Challenge 50K despite her unconventional preparation (three 20-mile trail runs in a single week).

Fellow runners suggested that Boller hire a coach, and her career took off. Highlights include a win at the 2015 Santa Rosa Marathon (in 2:45:27), eighth place at the 2015 Western States Endurance Run (her first 100-miler), and becoming the 2016 USA Track & Field 50K road champion.

On March 5, Boller defends her 50K title. She's balancing 85- to 90-mile weeks under coach Mario Fraioli with her day job as an attorney. When she struggles to do it all, Boller recalls how essential training is to her well-being. "If you think of it in those terms. there's never reason to feel guilty about the time you're spending running," she says.

Key Workout

WHAT

12 miles with five one-mile progression intervals

WHY

To learn pacing discipline and how to avoid starting too fast

WHEN

At the start of training for a goal race, then again as one of the last prerace workouts

HOW

Warm up with three easy miles, then run 5 × 1 mile with 75 to 90 seconds rest between each. Each mile should be faster than the last. Start five to 10 seconds slower than half marathon pace and go a bit faster each mile. with the last between 5K and 10K pace. Cool down with four easy miles.



ADJUST AS NEEDED

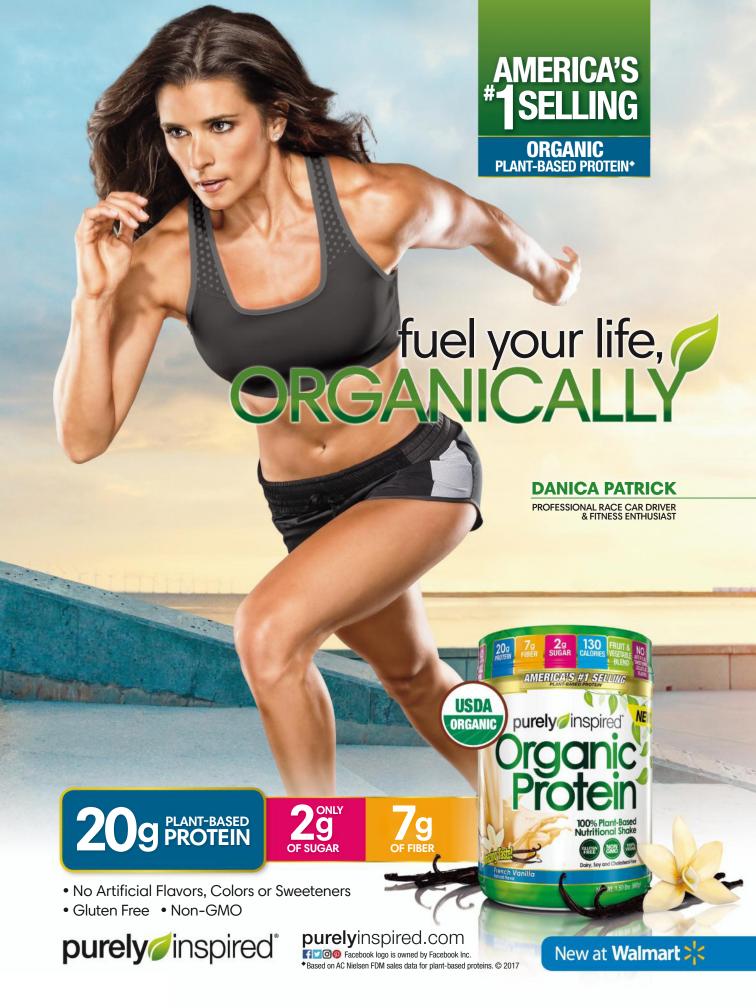
Boller takes extra easy days if she's fatigued, doing workouts over a nine-day cycle instead of a week until she feels fresher.

LEARN AND GROW

"Bad races are part of the process," Boller says. Focus on identifying what went wrong to avoid repeating mistakes.

SEEK HELP

If you're stuck in a rut, hire a coach—or team up with a training group that's prepping for your goal race.



THE FAST LANE

TRAINING ADVICE FOR PEAK PERFORMANCE

BY ALEX HUTCHINSON



SHOULD YOU KEEP GOING?

When to push through a tough workout—or not

Even legendary runners struggle to determine when to bag a bad workout and when to press on. Former marathon world record holder

Derek Clayton would run every repetition no matter what: "If I planned 15, I ran 15," he said. In contrast,

John Walker, who became the first sub-3:50-miler in 1975, would go home after one rep if he felt terrible.

Most of us lie somewhere in the middle. These signs will help you decide which workouts to tough out, which to alter, and when to throw in the towel.

STOP NOW

If you feel an injury developing, back off. Of course, recognizing injuries (as opposed to passing twinges) isn't always easy, but anything that forces you to alter your stride is a red flag. Acute, localized pain in a muscle, bone, or joint is another.

Fatigue or an inability to hit your goal times is a more ambiguous warning sign. We all have off days, and they're not always a good excuse to quit. Look for patterns: If you've been struggling for a week or more, and especially if you're feeling progressively worse, that could signal illness or overtraining. Take a complete training break until you feel fresher.

PROCEED WITH CAUTION

You start your workout, and the times are slower than expected—you feel worse than you think you should. It could simply be accumulated fatigue from running high mileage. If you've generally been feeling okay, modify the workout. If it's a long endurance workout, shorten it; if it's a tough speed workout, dial back the pace.

FINISH THAT WORKOUT

The most common mistake for most runners is forcing themselves to continue when they shouldn't. But there are some situations where it's important not to let yourself off the hook. One is when you consistently start workouts

(or races) faster than you intend: You want to run 10 × 400 meters in 75 seconds, but you run the first three in 70 seconds, slow over the next three, then quit. Another is when your goal paces are unrealistically fast: You're capable of averaging 75 seconds, but you tell yourself you should average 70 seconds.

South African sports scientist Ross Tucker argues that we make pacing decisions in races by comparing how hard our current pace feels to an internal template of how we expect the effort to feel. Developing this template takes trial and error: If it feels this hard a quarter of the way through the workout, I can sustain my pace; if it's a little harder, I can't. But that learning process is short-circuited if you simply move the goalposts or abandon workouts whenever they go poorly.

Everyone flies a little too close to the sun now and then, but if you find that you're cutting workouts short after a blazing start more than once or twice a month, you're ingraining patterns that may start showing up in races. The best way to learn how to set the right pace is to suffer the consequences when you don't.





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Make the smart choice. Get your free quote from GEICO today.





RACE PREP

ZOOM, ZOOM!

Sprints, strides, and surges can make you a stronger runner.

By Hal Higdon

IF YOU NEVER run all-out, you're missing something: Working at top speed can help any runner shave a few seconds to a few minutes off race times. Plus, allout running taxes your body in different ways than other types of running, even speedwork done at 5K pace. By pushing vourself really hard for short periods. you'll build muscle as well as the ability to run more efficiently. That means you'll be able to go faster throughout an entire race or workout, not just at the end. Sprints, strides, and surges all involve working at or close to your all-out speed—and they're all a fun change of pace from most distance training.



A sprint means going all-out for as long as you can hold it. Olympian and coach Fred Wilt recommended that distance runners run sprints weekly to develop muscular strength. Limit your sprints to 50 to 150 meters: If you try to go much farther, you begin to train the ability to maintain speed rather than to increase it.

IRY IT Warm up with at least a mile of easy jogging. Then aim for six to 10 repetitions, recovering fully between each. On a track, sprint one straightaway, walk and then jog easily around the turn, and sprint the next straightaway. On a road or trail, choose two landmarks about 100 meters apart. Exact time and distance don't matter: Focus on moving as swiftly and smoothly as you can.

STRIDES

Strides involve accelerating over the course of about 100 meters, reaching the fastest pace you'll hit—anywhere from 5K pace to all-out—about two-thirds of the way into each. Strides ease stiffness from hard workouts and prepare you for more fast training. They can also help you warm up before a workout or race.

TRYIT After an easy mile or two, do eight to 10 strides on a flat, smooth surface. Ease into the first couple to work out kinks. As you progress, you can make the fastest portions faster, with the last stride or two building to a close-to-all-out pace. Walk for 30 seconds to a minute between each. If you're doing strides as a warmup, do four to six and follow them with more easy jogging.

SURGES

A surge is a fast burst thrown into the middle of a run. Top runners use midrace surges to break away from the competition. For those farther back in the pack, practicing surges will improve your ability to change pace midrace. This can help get you out of a rut, or put you back on pace, which can result in a faster time.

IRVIT The term "fartlek" (Swedish for "speed play") is often used to refer to runs with surges. A fartlek run can be any distance, with a handful of surges of any length thrown in after warming up for at least a mile. One way to do a fartlek is to surge toward a point of your choosing in the distance, jog until you're mostly recovered, and then choose a new point to surge toward.



ADAPTED FROM THE THIRD EDITION OF RUN FAST: HOW TO BEAT YOUR BEST TIME EVERY TIME, BY HAL HIGDON (RODALE).

> You don't need a track to run fast any flat course without sharp turns will work.



























THE STARTING LINE

TIPS FOR BEGINNERS FROM AN EASYGOING COACH

BY JEFF GALLOWAY











WEATHER THE WEATHER

Variable conditions don't have to derail your running.

The first rule of outdoor exercise at this time of year is check the forecast before you head out. Depending on where you live, all kinds of weather surprises might spring up—snow, rain, fog, wind, heat—and you'll be more comfortable if you're prepared. Choosing the right apparel is only part of it (see page 48 for options). Here's what to consider, depending on what Mother Nature has in store for you today.

IT'S COOL

On not-cold-but-not-warm spring days, many runners overdress. Most of us don't need more than shorts and a T-shirt when it's warmer than 50 degrees. Between 40 and 50 degrees, consider long sleeves. And remember: Cold muscles need to warm up. Start by walking for three to five minutes.

IT'S WARM

The first few postwinter warm runs are especially challenging as your body adapts to working harder to cool itself. Try running earlier in the morning and wear loose, sweat-wicking clothing. Slow down, with longer walk breaks and shorter run periods as needed to keep your effort comfortable.

IT'S WET

April showers bring chafing and blisters. Use petroleum jelly or BodyGlide on your feet, underarms, and anywhere else that skin or clothing rubs. Wear a hat with a brim, and choose tech fabrics over cotton. In cold rain, wear a waterresistant jacket: Unzip it to let heat escape during run periods, and zip it up to stay warm during walk breaks.

IT'S WINDY

On gusty days, wear formfitting clothing to reduce drag, and avoid areas where debris might fall into your path. Plan your route strategically: Note the direction of the wind and try to plot an out-and-back course with a crosswind.

You Asked Me **Jeff answers** your questions.

Is it better to start or finish a run into a headwind?

It depends: On a cool day, starting with the wind at your back can help you feel warmer as you ease in, but it can be daunting to do the hardest part last. On a warm day, change direction every three to seven minutes, alternating with and against the wind for a cooling effect.

Is there a way to ensure I'm dressed comfortably no matter the conditions?

Anything touching your skin should fit well and be made of sweat-wicking fabric. Beyond that, choose layers and accessories that can be removed and carried easily. To pinpoint a perfect outfit, input the conditions at runnersworld .com/whattowear.

The Excuse I'm not running in the rain.

BEAT IT

When you wear the right gear, running in rain can be joyful. Go out in older shoes and do a short loop, jumping in as many puddles as possible. Take a warm shower as soon as you finish to avoid a chill. (Or just hit the treadmill instead!)



Being a health and nutrition correspondent means that companies frequently send me their products, and ask for my stamp of approval. Most of the time I dive into research, give the product a try, and send the company honest feedback about what they'll need to change before I'll recommend it. Plus my hectic job and my determination to stay fit means I'm always hunting for a quick and nutritious way to fill up on nutrients my body needs. So I can confidently say, "I've tried it all".

Last Tuesday work was especially hectic, but I'd booked with my \$200 an hour personal trainer, Tony, a triathlon winning, organic-tothe-bone fitness guy with a ten mile long track record of whipping the "who's who" into shape in record time, so I had to go. He noticed that my set count was down and playfully asked, "Feeling a little tired today?", as he handed me a bottle from his gym bag. After one sip I figured that there was no way this could be healthy because the creamy chocolate flavor was just too delicious. Still, he'd never risk his reputation.

With more than a healthy dose of scepticism I decided to investigate this shake he'd called INVIGOR8.

Turns out, it's a full meal replacement shake, which stunned me because virtually

every other shake I'd researched had tasted chalky, clumpy and packed with hidden "nono's" like cheap protein, tons of artificial ingredients, not to mention harmful synthetic dyes, additives, sugars, preservatives, and hormones. And even though INVIGOR8's full meal replacement shake cost more than many of the shakes I've tried, it was about half the price of my favorite salad, and the nutrition profile looked second to none.

Wanting to know more, I reached out to a few of the people who were talking about it on trustworthy fitness forums. By the next morning three people got back to me saying,

"As a trainer I love Invigor8. It's definitely helped me to have more all-day energy, plus build the kind of lean sculpted muscle that burns more fat."

"Yes, I'll recommend it, it tastes great, and I really like how it keeps me feeling full for hours."

"I'm a marathon runner and a friend recommended it to me. Drinking it has become a part of my regular training routine, because my time has improved, my energy is up, and I'm thinking more clearly than ever before."

I decided to take my investigation one step further by researching the development of INVIGOR8. I was pleasantly surprised to find out that the company went to great lengths to keep INVIGOR8 free of harmful ingredients.

to Lean!

Break Through Your Weight Loss Plateau

BY AMBER RIOS

Cheat

The makers of INVIGOR8 were determined to make the first 100% natural, non-GMO nutritional shake & green superfood. The result is a meal replacement shake that contains 100%grass-fed whey that has a superior nutrient profile to the grain-fed whey found in most shakes, metabolism boosting raw coconut oil, hormone free colostrum to promote a healthy immune system, Omega 3, 6, 9-rich chia and flaxseeds, superfood greens like kale, spinach, broccoli, alfalfa, and chlorella, and clinically tested cognitive enhancers for improved mood and brain function. The company even went a step further by including a balance of pre and probiotics for optimal digestive health, uptake, and regularity and digestive enzymes so your body absorbs the high-caliber nutrition you get from INVIGOR8.

As a whole-foods nutritionist with a thriving practice I understand the importance of filling my body with the best Mother Nature has to offer. I have always been reluctant to try new products because I was never sure of the impact they would have on my energy, and weight. INVIGOR8 is different, not only because it's delicious, but because it helps me to maintain the energy I need to run my busy practice, while helping me to stay fit and toned. Considering all of the shakes I've tried, I can honestly say that the results I've experienced from INVIGOR8 are nothing short of amazing.

A company spokesperson confirmed an exclusive offer for Runner's World's readers: if you order this month, you'll receive \$10 off your first order by using promo code "RUN10" at checkout. You can order INVIGOR8 today at www.DrinkInvigor8.com or by calling 1-800-958-3392.

PHOTOGRAPH BY ERIK ISAKSON/GETTY IMAGES



CrossFit builds full-body strength, which may help you avoid injuries. And you can replace some speedwork with CrossFit workouts that include running intervals. Do it three times per week max, on easy or off days (but not the day before or after a long run), and make sure your instructor is CrossFit certified.

—Holly Lynn is a CrossFit trainer and running coach at Clear Lake CrossFit in Webster, Texas.

Should I count walking steps?

If using a device to count steps motivates you to move more, sure. Walking won't directly make you a better runner—that requires the specific motions and impact forces that running generates—but it builds overall fitness. encourages muscle recovery, and helps you avoid the health issues that long periods of stationary time can cause. There is no ideal number of steps; just try to work in movement every 30 to 60 minutes. —Kevin Everett

(mascore.com) is a

coach, a former pro

triathlete, and the author of the book

Heart of Running.

How do I become a morning runner?

It's much harder to bail if you arrange to have a buddy meet you, so try that as you adjust to a new routine. Put your alarm clock far from your bed, set out your gear the night before, and prepare mentally: It might be dark and cold, but imagine how satisfied you'll be to complete your run first thing in the morning. Running early energizes you for the day ahead and makes it much less likely that other obligations will stop you from completing your miles. —Stacey Smith coaches runners in St. Augustine, Florida (empowercoaching andfitness.com).

The Explainer When did "cross-training" become a thing?

Wall balls, a CrossFit staple,

work your glutes

and shoulders as

well as your heart and lungs.

TRAINING

Ancient Greek philosopher Plato was one of the earliest advocates of a multisport lifestyle, recommending whole-body training for Olympic runners. In modern times, the idea took off when triathlons first became popular in the 1980s. Many runners who became triathletes found that even when they ran less, to allow time for bike rides and swims, their running-race times were just as fast or faster and their injuries less frequent. "That's because cycling and swimming improve your aerobic capacity and endurance without adding the impact stresses of running," says Mark Allen, a six-time Hawaii Ironman world champion who coaches at markallencoaching.com. Runners—especially injury-prone ones—began replacing easy-run days with bike rides and lap swims, plus other low-impact and/or strength-building activities.



UNPACK YOUR PERSONAL BEST

Every *Runner's World* Subscription Box comes filled with our handpicked favorites. We do the work. You enjoy the run.



SHRIMP BANANA CEVICHE Serves 2

Shrimp adds lean protein and more potassium.

FOLD 8 medium cooked shrimp with 1/2 diced ripe avocado, 1 diced firm banana, and 2 Tbsp. chopped red onion, and dress with 1 Tbsp. each lime juice and other fresh citrus juice, 1 Tbsp. olive oil, and 1 Tbsp. chopped cilantro. For a kick, add finely chopped serrano chilies or dried red pepper flakes.

TOASTED COUNTRY **BREAD WITH PROSCIUTTO** Serves 1

Refuel tired muscles with this protein-rich snack.

TOP a slice of toasted whole-grain bread with 1 smashed ripe banana, 1 oz. thinly sliced prosciutto, and 1 Tbsp. shaved Pecorino Romano.

SWEET FRIED BANANAS

Serves 2

Pair with rice and black beans for protein, fiber, and Latin-American flair.

SLICE 2 peeled, firm bananas, lengthwise. FRY in a skillet in 1 Tbsp. butter over medium heat until soft, 3 to 4 minutes.

Fruit Salad



Shrimp Banana Ceviche

In addition to potassium, bananas are a good source of vitamins C and B₆, which helps your body process protein.

OPEN-FACED SANDWICH

Serves 1 (Not pictured)

Tahini and honey add a twist to the peanut butter and banana classic.

TOP 1 slice whole-grain bread with ½ sliced banana, 1 tsp. honey, and 1 Tbsp. tahini.

WHOLE ROASTED **BANANAS**

Serves 4 (Not pictured)

This dessert is high in vitamin C and hearthealthy fats.

HEAT oven to 450°F. PIERCE 3 whole, ripe bananas with the skin on, using a fork (or stud them with whole cloves). PLACE on baking sheet and roast until black and oozy, 15 to 20 minutes. Let cool and remove skin (and cloves). SLICE and serve with 1 cup Greek yogurt, 1/4 cup toasted pecans, and peeled segments from 1 orange or blood orange, and sprinkle with 2 tsp. brown sugar.

FRUIT SALAD Serves 2

Boost your immune system with antioxidants.

SLICE and combine 1 of each: apple, orange, grapefruit, banana, and pear. MIX 1 Tbsp. lemon juice, ½ tsp. zest, and 2 tsp. maple syrup; drizzle on fruit.

PHOTOGRAPHS BY MITCH MANDEL

APRIL 2017 RUNNER'S WORLD 45

MENTAL **CHILLNESS**

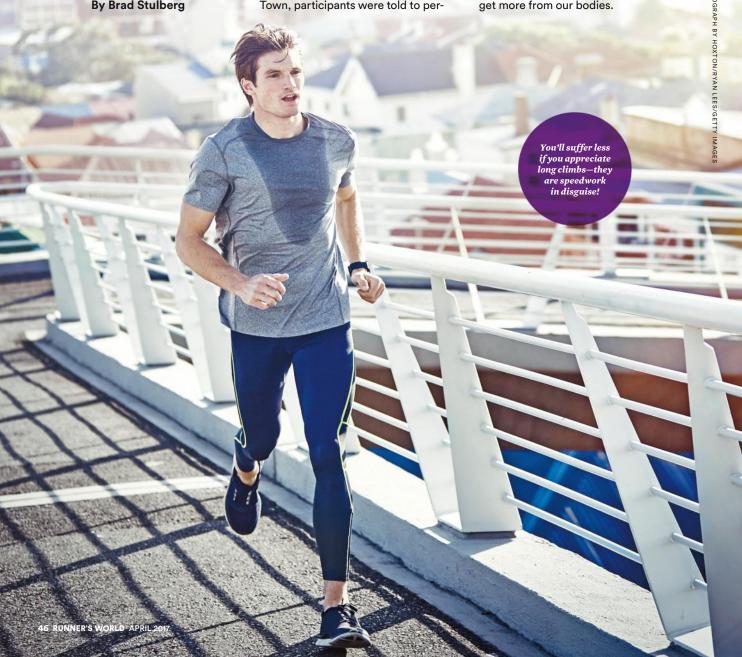
Rethink how you respond to pain and you'll nail every tough run.

By Brad Stulberg

IF YOU WANT TO run your best, there's no way around it: You're going to hurt. Whether you are racing the mile or the marathon, the ability to push through pain is what lets you translate training into a brag-worthy finish. And even if you run for fitness, you'll need to keep pushing your limits to see progress as your body becomes more efficient.

Research shows that the brain may "shut down" your body when you still have more to give: In experiments from South Africa's University of Cape Town, participants were told to perform high-intensity exercise for as long as possible. When they tapped out, researchers stimulated their muscles. which contracted with great force.

Samuele Marcora, Ph.D., director of research at the University of Kent's School of Sport and Exercise Sciences in England, says that while we run, the brain weighs "perception of effort with our motivation to succeed." When the former outweighs the latter, we slow or stop. If we change how we perceive effort and/or boost motivation, we may get more from our bodies.









RECALL SACRIFICES

When the midrace pain really sets in for ultrarunner Dylan Bowman, he shifts his focus to, in his words, "matching the suck with motivation." He does this by thinking about all the sacrifices he's made to get there: passing on extra pizza and beer, missing out on time with his fiancée in order to train, traveling to get to the race. "I've ended up winning races I didn't think I was going to win by thinking about all the things I've given up," Bowman says. "It's crazy how much more I can endure when I do this."

It helps to be prepared, so revisit your training log before a race to pinpoint the occasions on which you dragged yourself out of your warm bed or skipped a postwork happy hour to squeeze in a run.

Recalling those moments when you're starting to suffer may take your mind off the discomfort and boost your drive to make sure you get the most out of your hard work. A similar strategy may help you endure tough workouts, too.

GIVE THANKS

Karl Meltzer, who last year set the speed record for through-hiking the Appalachian Trail (averaging about 47 hilly and technical miles for 45 consecutive days), says his secret for handling pain is "thinking about how fortunate I am to be out here doing this." Throughout his hike, Meltzer deliberately and repeatedly thanked his support crew. "Showing gratitude," he says, "almost always makes things better."

Meltzer is on to something: According to Emiliana Simon-Thomas, Ph.D., science director at University of California Berkeley's Greater Good Science Center, expressing gratitude is effective because it "helps people transition from a self-focused and perhaps anxious mind-set to a more optimistic and content one." And optimism, she says, "opens the possibility of a positive outcome, which in and of itself is very beneficial." In fact, two recently published studies found that performing grateful acts and reflecting on all that you have to be grateful for led to positive changes in how subjects experienced pain and effort.

When the going gets tough, reflect on the people or circumstances that have contributed to your being out running right now. Some examples: your spouse, because he or she watches the kids while you log miles; your body, because it is healthy; your employer, because your salary pays for running gear and race registration. Even better, when you run through aid stations midrace, smile and thank the volunteers: Simon-Thomas says that gratitude is most powerful when you verbally share it with others.

MEDITATE

There is a growing body of evidence that suggests meditating for just eight weeks can induce structural changes in the part of the brain related to self-regulation. This helps manage our response to highly emotional stimuli, such as pain. Brandon Rennels, a mindfulness meditation teacher at the Search Inside Yourself Leadership Institute in San Francisco, says that meditation helps you distinguish between physical discomfort and your emotional response to it. "Pain is bad enough, but the anxiety attached to pain can sometimes be even worse."

To see how this happens, researchers at the University of Wisconsin scanned the brains of novice and expert meditators while applying a pain sensation to their legs. At first, both groups experienced a spike in activity in the anterior insula, a part of the brain linked to pain perception. Then, brain activity remained heightened in the anterior insulas of the novice meditators while it quickly subsided in those of the experts. It was as if the expert meditators chose not to engage in the patterns of anxiety that often make pain feel worse.

Rennels recommends meditation beginners start with one minute per day and gradually increase duration, working up to 15 to 20 minutes per day or more. Timing is less important than consistency, so do this whenever you can fit it in. To meditate, sit comfortably in a quiet place, set a timer for your desired duration, and focus on the sensation of breathing. If thoughts arise, notice them, then direct your focus back to your breath.

THE BODY SHOP

STRAIGHT UP

Strengthen postural muscles to crush hills without getting hurt.

MANY RUNNERS dread hills, but training on them confers benefits that help you run better on any terrain: glute and leg strength, a more efficient stride, and greater aerobic capacity.

Hill training also may lead to hip, knee, and ankle pain. The steeper the incline. the greater the stress on your body, and the harder it becomes to avoid slumping forward, says Mark Schneider, a personal trainer at The Movement Minneapolis: "If you can't maintain your posture, you will eventually break."

To stay healthy, perform these moves at least twice per week. Do the sequence once as a prerun warmup or four times as a workout on a nonrunning day.

-LAUREN BEDOSKY



FOOT SLAP With feet hip-width apart, rock onto your heels to lift the balls of both feet high, and slam the floor when you lower them. Begin with sets of 20 repetitions and work up to sets of 50.



QUADRUPED HIP CIRCLES From all fours, extend your left leg, bend it to circle it to the side and forward, then straighten it back. Do three or four reps, then switch

directions. Repeat

with the opposite leg.



REVERSE SLIDING LUNGE With a towel beneath your left foot and your weight on your right leg, slide your left foot back into a lunge. Push through your right heel to stand. Do 10 to 12 reps per side.



HIGH STEP Plant your right foot on a tall bench so your right knee is higher than your hip. Press through your right heel until your right leg is straight. Lower back down and repeat. Do five to 10 reps per side.



RESISTANCE BAND FACE PULL

Grip a band anchored overhead so your palms face down and your arms are straight. Pull your hands toward your face, keeping your elbows high. Do 12 to 15 reps.

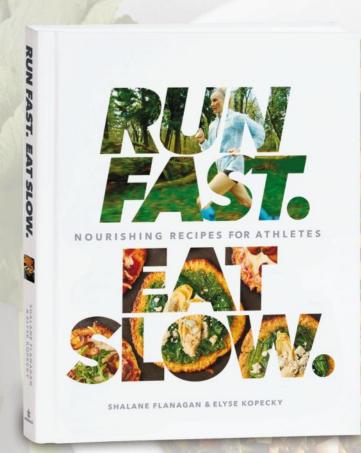


HAND-RELEASE **PUSHUP**

From a pushup, lower slowly to the floor. Lift your hands and squeeze your shoulder blades together. Plant your hands and push up to the starting position. Do 12 to 15 reps.



CUSHIONED THE ALL NEW FRESH FOAM 1080 Science you can feel. Designed directly from the data of runners like you, the ultra-plush Fresh Foam 1080 puts you at the cutting edge of comfort. new balance newbalance.com



FUEL YOUR RUN WITH REAL FOOD— RUN FAST. EAT SLOW. WITH **CHAMPION MARATHONER** SHALANE FLANAGAN!

From world-class marathoner and elite athlete Shalane Flanagan and chef Elyse Kopecky comes a flavor-forward whole foods cookbook that proves food can be both indulgent and nourishing at the same time.

Finally, here's a cookbook for runners that shows how fat is essential for flavor and performance and that counting calories, obsessing over protein, and restrictive dieting all do more harm than good.

Packed with more than 100 recipes for every part of your day, mind-blowing nutritional wisdom, and inspiring stories from two fitness-crazed women, RUN FAST. EAT SLOW. has all the bases covered.



SHALANE FLANAGAN is an internationally renowned athlete, champion marathoner, and American record-holding distance runner. Growing up a runner, Flanagan has always been passionate about food as well.

ELYSE KOPECKY is a food writer and whole foods chef. She is a graduate of Natural Gourmet Institute for Health and Culinary Arts. Formerly a digital marketing producer for Nike, Kopecky left the corporate world for the chance to inspire others to eat right.

RUNFASTEATSLOW.COM

Available wherever books are sold



Rodalewellness.com Follow us @rodalebooks on 💆 🛐 🔞 🖸







1 / GORE ONE LADY GTX SHAKEDRY RUN JACKET

Gore-Tex has been the go-to choice for waterresistance, but has been criticized as stiff and not breathable. The company's new "Shakedry" technology solves that for high-sweat activities. The single-layer shell causes raindrops to bead up and roll away. We've found it incredibly breathable—on a 45-degree rainy day, our tester finished a five-miler completely

2 / ADIDAS SUPERNOVA TKO JACKET

Best suited for breezy spring days, the TKO injects a dose of fashion into your daily jog. Thin and packable, it features a nylon body and sleeves to stop wind and fend off a light rain, while mesh netting under the arms lets heat escape. The men's version (pictured) has an extra mesh panel across the shoulders on the back to dump even more heat. \$90

3 / NIKE IMPOSSIBLY LIGHT JACKET

For misty or chilly spring days, this packable jacket is versatile. We've used it for everything from a sub-freezing run over a long-sleeve tee to a just-in-case option stuffed in a backpack on wet trails. It keeps you dry in light storms, but for more serious weather, opt for one of the other jackets here. \$100, women's shown

The women's

version of the TKO

Jacket (2) has a

4 / MYLES APPAREL ELEMENTS JACKET

This stylish shell would look at home if you were leisurely strolling a city street on a rainy day, but it has the technical chops when you stride out for a run, too. This men's jacket is made with Polartec NeoShell, a Gore-Tex alternative that uses a threelayer waterproofing system with a stretchy, breathable membrane. This means you'll stay dry on the inside and feel unrestricted movement. Bonus: less crinkly noise, too. \$248

5 / BROOKS CASCADIA SHELL

Trail runners will love this purpose-built pack. It has an expandable panel down the back and slits up the sides extending to the armpits so the entire jacket can slide over a hydration pack midrun. The water-resistant fabric will keep you dry until the storm passes. The hood leaves your face more exposed, but offers better visibility out the sides, which you'll need for navigating obstacles on the trails. \$100, men's shown



VEST IN CLASS

Tops that excel when conditions vary between nasty and nice

VESTS ARE SECRET WEAPONS

in runners' closets. For those in the south and along the coasts, it might be all you need to get through cold spells. For the rest of us, they bridge the gap between snowfall and short-sleeve season. Whatever the weather, they'll help keep your core toasty. These five have you coveredand look good, too.

1 / CW-X ENDUR-ANCE RUN VEST

Stretchy softshell with an athletic cut. Men's and women's come in gray. \$100

2 / JANJI NOMAD RUNNING VEST

This men's model is lightly padded and best suited for colder days. \$82

3 / ADIDAS ULTRA ENERGY VEST

The men's version (pictured) has a thinly insulated chest and highly breathable back panel. \$90

4 / LULULEMON KICKING ASPHALT VEST

This women's-only vest has elastic armholes that prevent it from bouncing. \$108

5 / MIZUNO ECLIPSE JACKET

The silky soft polyester shell has a wind- and waterresistant coating. The men's version is black. \$120





In supermarkets, fresh is best—but we all depend on packaged foods and drinks, too. Here are our nutrition experts' top picks and a few tasty and healthy ways to make them into meals.

BY MATTHEW KADEY, M.S., R.D.

PHOTOGRAPHS BY MITCH MANDEL

EXPERT PANEL

Alissa Rumsey, M.S., R.D., spokesperson for the Academy of Nutrition and Dietetics

Kelly Pritchett,

Ph.D., R.D., sports nutrition professor at Central Washington University

Emily Edison, M.S., R.D.

Marni Sumbal, M.S., R.D. To shop these items (and see dozens more not listed in these pages), go to runnersworld.com/bestfoods.



IN THE SKILLET

Look for products with short ingredient lists, says Rumsey.



APPLEGATE CHICKEN AND APPLE BREAKFAST SAUSAGE

Fry up tasty links, free of chemical preservatives, or nuke Jones All-Natural Golden Brown Fully Cooked Chicken Sausage for lean protein.



ENJOY LIFE PANCAKE & WAFFLE MIX

This gluten-free mix uses iron-rich teff, a grain that Ethiopian runners love. Or try grain-free Simple Mills Pancake & Waffle Mix.



HILARY'S APPLE MAPLE VEGGIE SAUSAGE

With just the right amount of spices and maple sweetness, these plant-based patties are packed with flavor and have a real sausage texture.



ORGANIC VALLEY **PASTURE BUTTER**

Rich-tasting butter from antibiotic-free. pasture-raised cows is higher in omega-3s and CLAs. Also try Kerrygold Pure Irish Butter.





WYMAN'S OF MAINE

FROZEN TRIPLE

BERRY BLEND Thaw and toss handfuls of brain-healthy berries onto cereal and yogurt, or blend into smoothies.





ORGANIC VALLEY **REDUCED FAT 2% MILK**

Research shows that deliciously creamy organic milk from pasture cows is higher in omega-3 fats-good news for your ticker!



BLUE DIAMOND WHOLE NATURAL ALMONDS

Studies show nut eaters tend to live longer, so toss these almonds onto cereal for a boost of vitamin E, a powerful antioxidant.

IN THE BLENDER

"You need a balance of carbohydrates, protein, and fat," says Rumsey. "And watch the calories."



HORIZON ORGANIC **LOW-FAT COTTAGE** CHEESE

Your muscles and midmorning hunger pangs will appreciate the 14 grams of protein in each half-cup serving.



ORGAIN GRASS FED WHEY PROTEIN **POWDER**

Each serving adds 20 grams of high-quality protein to smoothies from pasture-fed cows.



LIFEWAY ORGANIC PLAIN WHOLE MILK **KEFIR**

This cultured milk adds protein, calcium, and probiotics for a happy gut. Stick with plain to keep your sugar count low.



PROBAR KOKA MOKA **ALMOND BUTTER**

The cocoa and ground coffee in each squeeze pack borders on evil genius. (Not to mention it's high in plant protein.)

IN THE TOASTER

Aim for less than 300 mg of sodium and at least three grams of fiber.



FOOD FOR LIFE EZEKIEL 4:9 FLAX ENGLISH MUFFINS

These morning muffins are made with sprouted whole grains, known for the amino acid lysine, not often found in grains.



NATURE'S PATH **ANCIENT GRAINS** FROZEN WAFFLES

Made with spelt and khorasan wheat flour. Or: Van's Gluten-Free Blueberry Waffles, studded with real blueberries.

IN THE BOWL

Ideally, cereals should have five grams of protein and no more than 10 grams of sugar per serving, says Rumsey.



BARBARA'S HIGH FIBER MEDLEY

This flavor-packed cereal has 14 grams of fiber. For a gluten-free option with chocolate, try Nature's Path Qi'a Cocoa Coconut Superflakes.



KIND DARK CHOCO-**LATE WHOLE GRAIN** CLUSTERS

Chocolatey, yes, but not a sugar bomb. Need a bar? Try Seven Sundays Blueberry Lemon & Chia Muesli Square.



EARNEST EATS HOT & FIT ASIA BLEND

This blend of nutritional powerhouses includes oats, quinoa, dried mango, almonds, and matcha green tea powder. Indulge: It has 12 grams of sugar.



SILK ORGANIC UN-**SWEETENED SOYMILK**

This moo-free milk has more than twice the protein of other nondairy options, without added sugar. Go with organic if you're avoiding GMO soy.

FUELUP

PRERUN



CHAMELEON COLD BREW ESPRESSO

Boost your run with bottled espresso made with organic beans. High Brew Dark Chocolate Mocha will also get you out the door.



HEALTH WARRIOR Banana nut Chia Bar

At just 100 calories, this banana bread bar will fuel your run without weighing you down. Its chia seeds will keep your appetite at bay.



ZEST CINNAMON APPLE Black tea

Not into coffee? This extra-caffeinated black tea will power you through those tempo miles.



HEALTHY SKOOP Endurance beet blend

Beets have been shown to improve endurance. The added mango powder ramps up the flavor without sacrificing benefits.



MADE IN NATURE MAN-GO BERRY FIGGY POPS

A mix of dried fruits makes this prerun snack rocket fuel, without added sugars.



"I have half a Bobo's Oat Bar before an easy 12-miler and the other half after, with coffee."

GU SALTED CHOCOLATE

Running long? Pack

and have with water.

STROOPWAFFLE

FIORDIFRUTTA

FRUIT SPREAD

ORGANIC STRAWBERRY

berry-heavy spread

morning toast. Also

cheese (for after)

HEATHER MAYER IRVINE, SENIOR EDITOR (Food + Nutrition)



PB&J Waffle



MIDRUN

"When your run is longer than 60 minutes, you want 30 to 60 grams of carbs per hour," says Sumbal.



BASE PERFORMANCE BASE HYDRO LEMON LIME

Mix this powder with water for a quick hit of carbs and electrolytes. Its triple blend of sugars helps increase absorption.



NUUN ACTIVE Tri-Berry

For sweaty runs when you want electrolytes without the calories, drop one of these effervescent tablets into your water bottle to rehydrate.



BONK BREAKER STRAW-BERRY ENERGY CHEWS

Run strong with carbs and caffeine (24 g and 50 mg in four pieces, respectively). Or try Probar Raspberry Bolt Organic Energy Chews.



SUN-MAID RAISINS

Research shows that the natural sugars in raisins are just as good at helping you keep up the pace as engineered products. The mini boxes will fit in your fuel belt, too.



MUNK PACK MAPLE PEAR QUINOA OATMEAL FRUIT SOUEEZE

For a non-chew midrun carb hit, try this oatmeal-like gel. It tastes great and goes down easy. Also good as a prerun snack.



UNTAPPED ALL-Natural Athletic Fuel

Pure maple syrup gel provides fast-acting, tasty carbs. Take with water to dilute the sugar. Prefer bees? Try Honey Stinger Gold Gel.



CHERIBUNDI TART CHERRY JUICE

Refuel and recover with tart cherries, which fight inflammation. Blend into a yogurt-based smoothie for your postrun protein fix.



RUMBLE VANILLA Maple Supershake

Real maple syrup and 20 grams of protein make this a drink you'll be happy to run to the fridge for. Or mix Nomva Everberry into a smoothie.



POSTRUN

Within 30 minutes to two hours, refuel

PICKY BARS BLUE-BERRY BOOMDIZZLE

This real-food combo (dates, almond butter, and blueberries) has the ideal recovery ratio of 4:1 carbs to protein. And they're made by elite runners.



TRUMOO 1% Chocolate Milk

It's hard to find a better recovery snack than chocolate milk. It's got that perfect carb:protein ratio. Or try Organic Valley Organic Fuel.



JUSTIN'S CLASSIC PEANUT BUTTER

Inis runner fave has more protein than other nut butters (and Justin's has no added sugar). Peanut-free? Try Organic NuttZo Power Fuel.

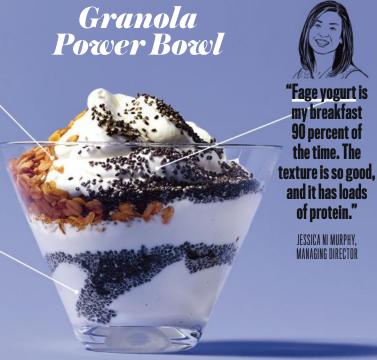


Kickstart recovery with the carbs and protein in a bowl of cereal. Viki's is also available in singleserving to-go packs.



NAVITAS NATURALS CHIA SEEDS

Chia seeds, which power Tarahumara super-runners, are high in fiber and healthy fat. Sprinkle onto yogurt.



LUNCH

Turkey Bacon Club



CANYON BAKEHOUSE Mountain White

sorghum flour. Perfect for postrun PB&J.



CABOT SHARP

CHEDDAR SLICES
These slices, each with 15 percent of your daily calcium creamy for your best grilled cheese.



APPLEGATE ORGANIC ROASTED **TURKEY BREAST**

antibiotic-free slices help you recover. Or



JUST MAYO SRIRACHA

This egg-free mayo has the perfect amount of vinegary heat for a flavorful ham sandwich. It's great in tuna salad, too.



APPLEGATE NATURAL **TURKEY BACON**



GREEN GIANTS

Top leafy greens with lean protein and healthy fat for a perfect meal.



READY PAC ELEVATE SWEET GREENS & CHIA SEED SALAD

Greens plus wholegrain sorghum, aronia berries, almonds, and cacao nibs make this salad high in antioxidants and healthy fat.



EPIC CURRANT + SESAME BBQ CHICKEN BITES

Top your salad with this high-quality protein (without weird ingredients). Also good for snacking straight from the bag.



LUCINI TUSCAN BAL-Samic Vinaigrette

You won't find many balsamic vinaigrettes that use healthier extra-virgin olive oil instead of cheaper vegetable oils. This is one of the good ones.



SUPERSEEDZ Tomato Italiano

These savory pumpkin seeds contain protein, beneficial fats, iron, and immunity-boosting zinc. Toss them on salads, soups, and pizza.



HEAT AND EAT

Go for high-quality whole grains and short ingredient lists with recognizable items, says Pritchett.



AMY'S ORGANIC CHILI WITH VEGETABLES

This veg-heavy chili will help you avoid afternoon vending machine temptation with its satisfying chunky texture and eight grams of fiber.



NONA LIM CARROT GINGER SOUP CUP

This is the perfect blend of gingery zing and silky texture packed with vitamin A-complete with a special sipping lid. No spoon required.



MORNINGSTAR FARMS THAI YELLOW CURRY VEGGIE BOWL

An Asian-inspired meal of snap peas, carrots, and protein-rich edamame over brown rice and quinoa for quality carbs.



PACIFIC ORGANIC VEGE-TABLE MASALA STEW

Yellow split peas and real vegetables team up to give each serving six grams of fiber, keeping postlunch hunger at bay—without all the salt.

BREAD WINNERS

Your sandwich bread should have whole grains as the first ingredient and at least two grams of fiber per slice, says Pritchett. Then add lean protein and low-calorie flavor boosters.



ARNOLD EXTRA GRAINY 17 Grains and Seeds

A wholesome bread with whole-wheat flour as the first ingredient and four grams of fiber per slice. Quinoa and amaranth add nice texture.



SIETE ALMOND FLOUR Tortillas

These gluten-free tortillas are a good source of protein (thanks to almonds), vitamin E, and hearthealthy fat-and don't crumble when rolled.



ORGANIC PRAIRIE ROAST BEEF SLICES

These organic slices are packed with protein and iron, minus the mystery preservatives.



ORGANICVILLE STONE GROUND MUSTARD

At just five calories in each tablespoon, you can spread this sugar-free mustard generously on your bread to spice things up.



WILDBRINE ORGANIC SMOKY KALE KRAUT

Add tang to sandwiches and keep your gut healthy with probiotic-rich kale "sauerkraut."



WILD PLANET ORGANIC ROASTED CHICKEN BREAST

This no-water-added (BPA-free!) canned chicken tastes better than most fresh stuff and packs in 12 grams of protein per serving.

SNACKS & SIPS



LACROIX ORANGE SPARKLING WATER

Great fizz and a taste of sweet sunshine without the sugary calories. (Even better in postrace celebratory cocktails.)



BARNEY BUTTER BARE ALMOND BUTTER

Squeeze a packet of no-sugar-added nut butter on slices of apple for a hearthealthy snack.



KRAVE WILD Blueberry Beef Bars

Brain-friendly blueberries add natural sugar. Or go fish with EPIC Salmon Sea Salt Pepper Bar.



REVIVE ASCEND Kombucha

Live cultures boost digestive health. And it contains a low three grams of sugar per serving.



TRADITIONAL MEDICI-NALS CHAMOMILE

Proper shuteye is an important part of exercise recovery, and this tea before bed helps you feel cozy.



BELVITA SOFT BAKED Banana Bread

This tasty wholegrain-based snack has four grams of fiber and zero grams cholesterol. Yes, please!



LÄRABAR CHERRY Chocolate Chip bites

This Instagramworthy snack has dates, almonds, Fair Trade chocolate chips, and cherries.



SIGGI'S 2% BLACK CHERRY SKYR YOGURT

Real fruit adds sweetness with less sugar than other brands. Also high in vitamin D, calcium, and protein.



V8 LOW-SODIUM VEGETABLE JUICE

Packed with the antioxidant lycopene to help reduce muscle damage. Or try *Natalie's Tomato Juice*.



BRUSSEL BYTES CHILI PUMPKIN SEED CRUNCH

Load up on vitamins A and C and iron with these crisps. Cashews and pumpkin seeds have good-for-you fat.



MATCHA LOVE ORGANIC Matcha + Green tea

Unlike most bottled teas, this one isn't high in sugar. And matcha may help with weight loss.



SIMPLE SQUARES COFFEE ORGANIC SNACK BAR

Perk up with these grain-free, nut-heavy bars, made with real coffee beans.



ZICO NATURAL Coconut Water

Coconut water, high in electrolytes, is a great base for your postrun smoothie.



GAEA PITTED GREEN OLIVES WITH LEMON & OREGANO

These marinated olives are addictive. With just 15 calories per serving, you can eat the whole bag.



ANNIE CHUN'S ORIGINAL SEAWEED CRISPS

Seaweed has more vitamin C than an orange and is high in iodine, for a healthy thyroid. Beach not included.





BELGIOIOSO FRESH Mozzarella

SNACKING CHEESE

Skewer this calcium-

packed cheese with cherry tomatoes for an on-the-go Caprese salad.





EXPERT Q&A

How do you satisfy a sweet craving?

Crumbling a square of dark chocolate onto vanilla Greek yogurt. –Alissa Rumsey, M.S., R.D.

You're stranded on a desert island. What is the one packaged food you need?

Trail mix since you get healthy fats and protein in the nuts; the carbs in the dried fruit for energy. –Kelly Pritchett, Ph.D., R.D.

When you're stuck in traffic and the hunger monster strikes, what do you wish you had in your glove box?

An Almond and Coconut KIND bar! It's a satisfying balance of protein, healthy fats, and carbs that keeps road rage at bay.

-Emily Edison, M.S., R.D.

When traveling for a race, what food do you always bring?

Smucker's Natural Peanut butter is my favorite go-to preworkout and anytime food. It leaves me satisfied and happy. –Marni Sumbal, M.S., R.D.

I*WBOX

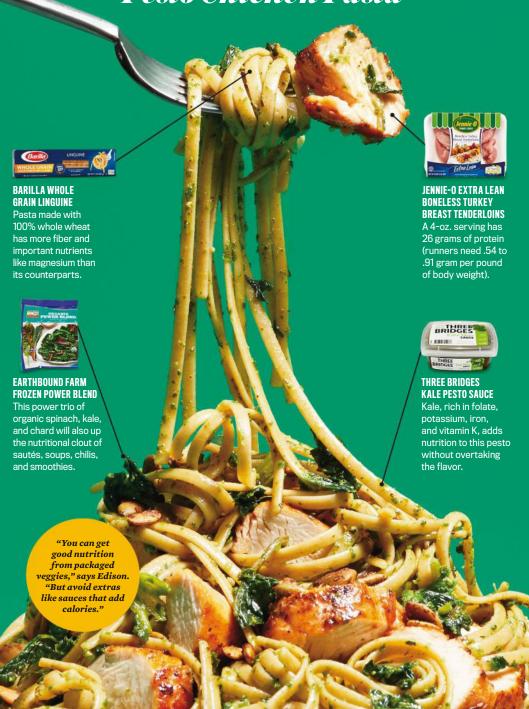
GET THE RUNNER'S WORLD BOX!

Each month a new RW box will contain editors' favorite products. This month features tasty picks from these pages. For more intel, go to runnersworld box.com.

DINNER



Pesto Chicken Pasta



TAME THE BEAST



AL FRESCO ROASTED GARLIC AND HERB CHICKEN SAUSAGE

Juicy and garlicky chicken is lower in fat than pork. The herbs replace some of the salt to keep sodium levels in check.



AUSTRALIS BARRA-MUNDI ALL NATURAL SKINLESS FILLETS

Cook up a buttery fillet with omega-3s and lean protein. Bonus points for sustainable farming practices.



BEETNIK ORGANIC RAGU Alla Bolognese

Even an Italian grandmother would approve: organic ironrich beef and plenty of tomato goodness (which is high in antioxidants).



ORGANIC PRAIRIE GRASS-FED 85% LEAN GROUND BEEF

Use this omega-3and vitamin E-packed beef in pasta sauces, tacos, and meatloaf.

VEG OUT



CALIFORNIA OLIVE RANCH EXTRA VIRGIN OLIVE OIL

High in healthy fat and anti-inflammatories. Prefer nuts? Try La Tourangelle Roasted Walnut Oil.



LOVE BEETS ORGANIC COOKED BEETS

High in performanceboosting and blood pressure-lowering nitrates.



GARDENLITES BUTTER-NUT SQUASH SOUFFLÉ

This sweet puree boosts your meal with vitamin A, vitamin C, protein, and five grams of fiber.



TOMMY'S SUPERFOODS **ROOT FUSION**

Rev your immune system with more than a day's worth of vitamin A, thanks to carrots, beets, sweet potato, and apples.



NEWMAN'S OWN ROASTED VEGETABLE THIN & CRISPY PIZZA

venient freezer pizza delivers antioxidants and three grams of

fiber per serving.

Complete your dinner with whole grains for quality carbs for your legs (and brain!). Upping whole-grain intake can help fight cancer.

REIGN OF GRAIN



EVOL BEAN, RICE & CHEDDAR BURRITO

STYLE PROTEIN BLEND This nuke-ready burrito, stuffed with pinto This frozen meal, with lentils, green veggies, beans and brown rice, has a good balance and bulgur, has 12 of carbs, protein, and grams of fiber and 13 grams of protein per fat, and less sodium 1½-cup serving.

NUKE ATTACK

Unless you've just sweat buckets,

choose a meal with no more than

800 mg of sodium, says Edison.



KASHI BLACK BEAN MANGO BOWL

Kashi

BIRDS EYE STEAM-

FRESH CALIFORNIA

Whole grains like oats, rye, and barley are topped with a sweet-savory blend of mango, fiber-rich black beans, and veggie chunks. Yum!



LUVO CHICKEN & HARISSA CHICKPEAS

Fill up on white meat, brown jasmine rice, and chickpeas with 19 grams of protein. Mango and butternut squash add a touch of natural sweetness.



protein!" ERIN BENNER. ART DIRECTOR

packed with



ALEXIA SWEET POTATO FRIES WITH SEA SALT

Try this unfried sweet potato variety (full of vitamin A) with sea salt, which has magnesium, zinc, and potassium.



LUCINI RUSTIC TOMATO BASIL ORGANIC SAUCE

Packed with tomatoes that taste like they were just pulled from the vine, this nosugar-added sauce rivals the secret family recipe.



ALTER ECO ORGANIC RAINBOW HEIRLOOM OUINOA

Quinoa is the only grain with complete protein. And this trio of beige, red, and black quinoa delivers a ton of flavor.



POTATO NOODLES WITH CREAMY CASHEW **ALFREDO**

Lower in starch and higher in antioxidants than wheat pasta. vegetable noodles are all the rage.



TRUROOTS **ORGANIC FUSILLI**

This gluten-free, brown rice-quinoaamaranth pasta actually has better texture and taste than many wheat-based noodles.



MINUTE READY TO **SERVE MULTI-GRAIN MEDLEY**

Precooked brown rice, quinoa, barley, oats, wheat, and rye make it easy (and quickl) to have a fiber-rich side dish.

NOT-SO-GUILTY PLEASURES



HUNGRYROOT ALMOND CHICKPEA COOKIE DOUGH

Almond butter, chickpeas, and sweet potatoes make for a nutrient-dense raw (or baked!) treat that tastes like real cookie dough.



EATPOPS GLOW

Chill out with noadded-sugar pops made of carrot, mango, and pineapple, for an immunefriendly dessert.



TALENTI SICILIAN PISTACHIO GELATO

Gelato is a gift from Italy. It uses more milk than cream, in contrast to ice cream, making it lower in fat (but not in flavor).



BARE COCOA BANANA CHIPS

Potassium-rich bananas? Good. Chocolate? *Goood*. Try this combo as-is, or dip 'em into nut butter for a boost of protein.



EDY'S SLOW-CHURNED FRENCH VANILLA ICE CREAM

Edy's uses nonfat milk without sacrificing creaminess or taste. Or try dairy-free NadaMoo! MMM... Maple Pecan.



ALTER ECO DARK Blackout organic Chocolate

Research has shown that dark chocolate (when it's at least 70% cocoa) can boost brainpower and help your heart.



AMONG FRIENDS SUZIE Q'S OATMEAL CHOCO-LATE CHIP COOKIE MIX





MIXITUP





Whey Better Tonic

Ingredients

- 1 scoop Biochem Organic 100% Whey Protein Vanilla
- 4 oz. cold brew coffee concentrate
- 2 oz. half and half
- 2 oz. water

Directions

Blend to combine.

Mango Sunshine Smoothie Bowl

Ingredients

- 6 tbsp plain unsweetened almond milk
- 11/2 cups frozen mango chunks
- 1/2 cup chilled cooked cauliflower
- 2 tbsp coconut butter
- 1 scoop Biochem 100% Whey Sugar Free Protein Coconut
- 1 pitted date
- 1/4 tsp ground turmeric, optional

Directions

To a blender or food processor, add all ingredients; blend until smooth. Serve with toppings of your choice (like blueberries)!

1 Serving of Delicious BIOCHEM® Whey Protein

From Grass Fed American Dairy Cows





In the U.S., DRUG & ALCOHOL ABUSEIS RAMPANT.

The face of addiction is your sister, your nephew, your next-door neighbor. New science suggests

RUNNING MIGHT HELP USERS FIGHT THE DISEASE.

Is this the break-

through we've

been searching for?

The RUNNER'S HIGH

A SPECIAL REPORT by CALEB DANILOFF

Inkat

Young perhaps, but it was Soviet Moscow, where my dad was stationed as an American journalist in the 1980s. I wasn't very good at drinking, though I tried. When I was 15, I was arrested three times for public drunkenness, twice in one day. Back in the States, while

I was still in high school, a litany of drug and alcohol violations got me kicked out of boarding school—with the final incident just hours before my graduation ceremony, my father the keynote speaker (nope, no daddy issues there). In college, the morning I was scheduled to clock in for a new job, I woke up behind the wheel, on a highway in another state, facing the wrong way. Several years later, a DWI and drug charges landed me in the crime log of the newspaper where I worked as a reporter. And so it went.

Fast-forward 17 years and I'm catching my breath near the 14,115-foot summit shown above in Moscow in of Colorado's Pikes Peak, my race bib 1984, was often fluttering in the wind. Bracing myself at inebriated as the halfway mark of the grueling mountain marathon, taking in the countless jagged switchbacks I'd just picked across, I couldn't help but think about the distance I'd put between Then and Now. And the irony: that after nine marathons and thousands of miles, this is how I get high. Standing on a vast rooftop shingled with mountain peaks, the thin air fizzing my brain, I was feeling pretty buzzed. And grateful. I largely have running to thank for my transformation. After years of face-plants (literal and figurative) and a self-image curdled by guilt and self-loathing, a simple pair of running shoes had returned mo-



The author,

a teen.

mentum, even joy, to my life and allowed me to evolve into a capable person—a genuine human being.

And I wasn't alone.

About five years into my running lifemostly solitary back-country road work-I started to come across stories about other troubled souls who had traded in chaos for

running shoes: a meth-head-turned-Ironman-competitor; a recovering crack addict who once ran 350 miles in a week; an ex-convict alcoholic who would tackle the equivalent of almost six back-toback marathons across the Gobi Desert. Later, I'd read about a treatment center in East Harlem that trains rock-bottom people suffering from addiction to finish the New York City Marathon and another in Canada that mandates running, complete with a natural track area on the premises and an annual race named the "Redemption Run."

I wrote a recovery memoir in that time, and when it was released, my in-box swelled with messages from around the country: from other drunks-turned-runners, sober marathoners, freshly quit opioid addicts, the imprisoned, psychiatrists, and drug counselors. Other than some skeptical 12-steppers arguing I'd substituted one addiction for another (I didn't go the Alcoholics Anonymous route), all were firm believers in the healing power of the run. In something as simple as hitting the road, they, too, had felt a loosening of

addictive thoughts and a sparking of positive changes in the brain, and in the heart. But was there much to it beyond our personal stories and a would-be "swapping of vices"?

RE-LACING THE BRAIN

WHILE MOST AGREE that addiction is a neurological disease or disorder rather than a moral failing or question of willpower, scientists still aren't sure why certain people who experiment with drugs and alcohol become addicted while others don't. Many point to an imbalance in dopamine (the feel-good brain chemical) and a deregulation of glutamate, the brain's main excitatory neurotransmitter responsible for parts of our learning and memory.

Environment, genetics, and stress are believed to play roles, too. But a growing body of research suggests that aerobic exercise like running can, in fact, rebalance those neurotransmitters, reduce sobriety-crushing cravings, and even repair drug-damaged parts of the brain.

"The studies are showing that there's definitely an effect in the interaction between physical activity and the way that we respond to drugs," says Nora Volkow, M.D., director of the National Institute on Drug Abuse (NIDA), an arm of the National Institutes of Health in Bethesda, Maryland. "Some of the research has started to document the molecular mechanisms responsible for these interactions, but that's in the very early stages. But we don't need to wait for all of the evidence, to cross all the T's and dot all the I's, before we can recommend it."

John Ratey, M.D., has been preaching the lace-'em-up cure for years. The associate clinical professor of psychiatry at Harvard Medical School in Boston says that even a little bit of running can make a big difference. "What happens immediately when you begin to run is you get a boost in dopamine, noradrenaline, and serotonin, just as if you were taking a little bit of Prozac and a little bit of Ritalin," he says.

Ratey, a longtime runner who logs about 15 miles per week and a practicing psychiatrist who has counseled plenty of people with addictions, says quitting isn't necessarily the hard part. It's the maintenance of sobriety, which is too often undermined by stress, anxiety, and depression, things that are rife in the newly sober life.

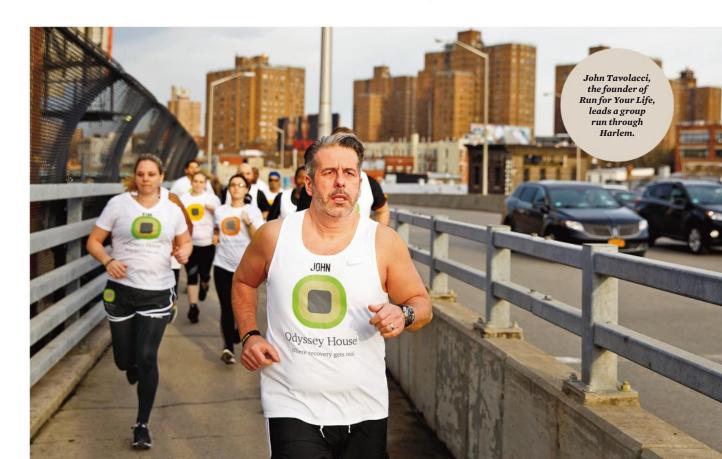
"Many of the great [exercise] studies have been done on smokers because nicotine, which is really our toughest addiction, acts similar to drugs of abuse by pumping up the dopamine system," Ratey says. "Smoking cravings are intense. One of the ways of dealing with them is to go for a run or a brisk 10-minute walk. Not only is that a positive activity, it changes the brain chemistry

so you are much less responsive to stressors. It just is a fact. It takes more to stress you out than it did before running."

Plenty of clinical and preclinical research supports Ratey's views. In 2011, researchers at Vanderbilt University in Nashville set a dozen heavy-using pot smokers on treadmills and, over two weeks, had them run ten 30-minute sessions at 60 to 70 percent of their maximum heart rate. The result? A more than 50-percent decrease in sparking up. In London, in 2004, researchers showed that even 10 minutes of moderate exercise dulled the craving for a drink among recently detoxed alcoholics. A 2013 study out of the University of Colorado at Boulder even showed a possible reversal of cognitive brain damage in recovering alcoholics who exercised aerobically.

These are just a few of the nearly 100 studies that Wendy Lynch, Ph.D., an associate professor of psychiatry and neurobehavioral sciences at the University of Virginia School of Medicine in Charlottesville, gathered into a comprehensive article titled, "Exercise as a Novel Treatment for Drug Addiction: A Neurobiological and Stage-Dependent Hypothesis," published in the June 2013 issue of Neuroscience and Biobehavioral Reviews. Lynch says that much like the development of AIDS or diabetes, addiction takes hold in distinct phases and alters different parts of the brain accordingly. At almost all stages—initiation of drug use, addiction, withdrawal, and relapse—according to the studies Lynch reviewed, exercise had a positive impact no matter the substance of abuse.

"In the early stages of addiction, where dopamine is primarily motivating drug use, exercise also ac-





tivates dopamine," Lynch says. "So it could serve as an alternative to the drug reward and prevent future drug use."

YOUR BRAIN ON RUNNING

A HEALTHY BRAIN releases pleasure-jolting dopamine when we engage in life-sustaining behaviors like eating and sex. The good times are then encoded in regions that control memory, new learning, and motivation, ensuring that we continue to engage in these activities and, in turn, live to see another day.

In this simple, efficient system, drugs and alcohol can act as gremlins opening flood walls. Dopamine flows down the reward pathway, which we experience as euphoria. Then, just as the reward-motivated brain is programmed to function, it teaches us to repeat the behavior. For the predisposed, the mind begins to burn with a new central concern: another drink, the next score. At the same time, we start producing less dopamine naturally to compensate for the tide of outside stimuli. That means people with addictions need more drugs to achieve the same high, and eventually to simply stave off the pain and anguish of a dopamine dearth. Life becomes strictly about maintenance—not chasing a good time. The party's over.

When a chronic user decides to quit and shuts off that outside dopamine spigot, the brain is suddenly bereft and perceives survival to be at stake, just as if faced with a lack of food. With next to nothing going on in the pleasure-jolting department, the addict's mind and body receive bright, desperate flares of craving. Throw in depression, a bad day at

work, or a memory trigger—something as small as the sweat beads on a bottle of beer—and you have a recipe for relapse.

It's during the early days of abstinence, Lynch says, that glutamate starts to rise and etch the directions for craving into the mind. A recovering addict who experienced heightened glutamate levels in withdrawal will see those sweat beads on the beer and experience pangs of craving months, even years, after their last sip.

In 2012, Lynch and her team found evidence in a preclinical trial that exercise may reduce craving by normalizing glutamate signaling. She gave a group of laboratory rats access to high levels of cocaine, essentially addicting them, then abruptly cut off the supply for two weeks. During that time, she gave one group a running wheel two hours a day while another was left alone with just their little white knuckles. During the abstinence period, the running rats pressed the empty drug-release lever 35 percent less than their counterparts. When small doses of the drug were reintroduced, the running rats pressed 45 percent less. (Similar results were found in an independent study conducted at the University of Minnesota at the same time.) In 2016, a second trial showed that when exercise was implemented within seven days after suspending drug use, cravings were dramatically reduced.

"We've shown that even a modest amount of exercise early in abstinence can reverse changes in the brain and reverse subsequent relapse vulnerability," Lynch says. "Now, we're trying to figure out how exactly exercise is doing that."

One element, she says, may be an exercise-induced elevation of brain-derived neurotropic factor (BDNF), which helps make a protein necessary for brain cell communication and memory-encoding. Imagine this protein as the telephone lines between brain cells and synapses. Drugs come in like lightning, causing worn and downed cables. But scientists say a good, lung-heaving sweat can actually repair drug-induced neurological damage. What's more, BDNF might encourage the growth of new cells critical to the brain's ability to learn as well as to repair synapses that

can stave off depression, both of which can contribute to success in recovery. One study showed that running degrades traumatic memories among mice, thus potentially blunting a prominent trigger for relapse.

BDNF may also increase levels of GABA, the chief inhibitory neurotransmitter in the central nervous system. GABA makes us feel more tranquil and gives us a sense of well-being. Without it, a person would constantly be on edge, anxious, unable to relax—how an addict often behaves when gripped by cravings. In other words, GABA counterbalances the excitatory role of glutamate, acting as the brain's brakes, in a sense.

Ultimately, Lynch says, if scientists can pinpoint when and how these various exercise-prompted changes are taking place in the brain, one could then figure out how to, literally, prescribe physical activity—in minutes instead of milligrams—and also at exactly what points along the addiction spectrum. "Exercise acts like a drug on the brain chemicals," she says. "But it's a good type of drug that enhances systems that are in deficit. It re-regulates brain functions and can prevent relapse."

Daniloff, before running: Drinking and smoking in a cheap motel room in 1990.



void that I packed with pizza, burgers, and ice cream. Two years later, someone snapped a photo of me on the beach. I was unrecognizable—my nose and eyes were buried under a mound of pale dough, my belly drooped down toward the sand. I was sober, but not exactly the poster boy for recovery.

"The classic treatment of addiction is simply the treatment of the drug the patient is abusing and not addressing other health issues like smoking or overeating," says David Jones, Ph.D., a psychologist at Three Oaks Behavioral Health near Jackson, Mississippi. "People still maintain that addictive cycle on a daily basis, that up-and-down cycle of 'When do I get my next smoke or that next Twinkie?' It keeps patients in a state of hypervigilance."

Jones, himself recovering long-term from addictions to alcohol and codeine, has been running for 40 years, and the 10-time marathoner is known to begin some group therapy sessions by taking his patients out for a few miles. Running not only softens some of the pains of sobriety, he says, but it can interrupt those displaced addictive behaviors. "What running does is makes you pay more attention to other issues as you're starting to produce your own levels of dopamine rather than depending on those external sources."

While I can't deny it was anything more than vanity that first prompted me to break an honest

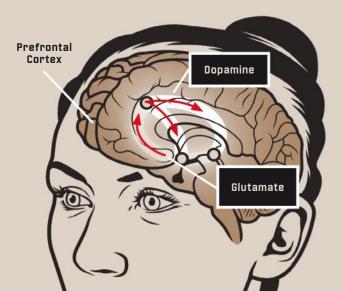
FLIPPING THE SWITCH

WHEN I QUIT DRINKING in 1998, there was no dramatic rock bottom. But just like the seemingly fateful constellation of factors that had set me down a dark path, a number of mishaps set me straight. I was exhausted. Controlling my behavior (minimizing, lying, deceiving) had become a full-time job. And despite my avoidance of mirrors (except with a rolled-up bill between my fingers), I'd caught too many harsh-lit glimpses: of a guy who got rock-star wasted alone in his apartment, who brought homeless men back to his place for beers, whose waking state was either guilt or stage fright, usually both. I wanted to feel different, something, anything. So just shy of my 30th birthday and with the pending implosion of yet another romantic relationship, this time with a young child involved, I gritted my teeth, dug in my fingernails, and resolved to change course.

But without the gauze of booze and cocaine, my depression, anxiety, and insecurities were practically blinding. Not surprisingly, I didn't exactly part ways with my addictive mind-set, my brain still triggering any dopamine blast it could. I continued to smoke heavily, gulped coffee, and ate like a boss, my hands and mouth a blur of activity. At the center of my life gaped a bottle-shaped

Lighting Up the Craving-Reward Pathway

One way drugs affect the brain is by flooding it with the euphoria-inducing chemical dopamine. The more drugs are used, the less dopamine is produced naturally—so users need more drugs to achieve the same high. When an addict abstains, levels of glutamate, the excitatory neurotransmitter responsible for memory and learning, start to rise, causing extra anxiety and amplifying craving in the user. The diagram at right depicts the approximate regions in the brain where these processes take place.



sweat—in the pool, at first—I did find myself starting to sleep better and cutting back on the chocolate and doughnuts. When I found my way onto a treadmill, little by little, other things started to click. I eventually worked up the courage to run outside, on a dirt road outside of the small Vermont town where I'd been living.

Those first mornings were coal-black, predawn, when no one except cows could see me. But the miles began to steer me through sobriety's rough patches—ones I hadn't yet faced—blunting the depression and panic just enough for me to start unpacking the shame and guilt that still burned under my skin.

All of my apologies would be drafted at six miles an hour as I picked across roadkill and ruts. The shin splints, sore muscles, and seared lungs put me in a state of penance. The rare moments that I did come upon another runner, even getting that simple wave, with its silent understanding of work and reward, was enough to keep me going. After years of drawing the shades, I gradually began to rejoin the human race.

There may have been a transition of a different sort taking place, according to Harvard's Ratey. A key marker of recovery, he says, is the psychological move between the brain's two reward systems: the Reactive Reward System, which operates from a more primal, instinctual, short-term position, and the Reflective Reward System, which is marked by the ability to delay gratification, to make considered decisions, and to think in the long term.

"The Reactive is more animalistic," Ratey says.
"It's your craving, you're going for it, you're being pushed from below. When you start running, you build additional brain connections to help break

the craving and hold back the Reactive, to make it less potent. Reflective is more of a decision behavior. You have goals and motivation, an overall wish, other activities. You're building up the frontal cortex, which promotes new and wonderful learning to help you achieve your goals."

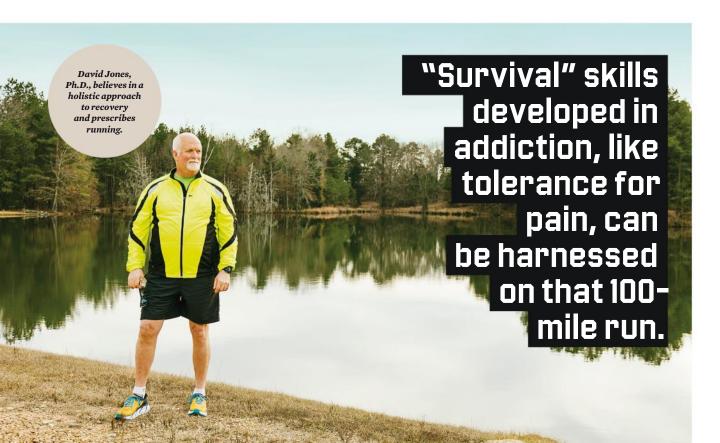
John Tavolacci, executive vice president and chief operating officer at Odyssey House treatment centers in New York City, is a long-term recovering addict and 22-time marathoner who founded a program called Run for Your Life, which has offered clients running and marathon training since 2000. Tavolacci says he's witnessed not only the critical return of self-esteem in his clients, but flat-out redemption. So far, 350 men recovering from addictions under his watch have crossed the finish line at the New York City Marathon—and continued moving forward toward healthier, productive lives.

"Odyssey House is the last stop on the recovery train," Tavolacci says. "It's not a luxury, private rehab center. These are individuals who may have been in prison, from low socioeconomic backgrounds. There's this history of failure, of everyone giving up on them. The Run for Your Life program is really about showing the world you're not useless, not part of a society that everyone gave up on. This is an opportunity to prove everyone wrong."

And redemption can lead to belonging, both of which can translate to success in sobriety.

"People who have addictions just want to fit in," Tavolacci says. "They're misfits. People relapse because they don't add anything to their life to make them feel like they belong. They go to AA. They go to NA. But nothing else. What I find is people who go through the running program stay in treatment longer and the research says that with long-term treatment, the longer you stay in it, the more likely you are to succeed."

Up north in Ottawa, Ontario, all able-bodied residents at the Harvest House treatment center are *required* to run five times a week as part of the program. In the winter, they shovel the track on the grounds behind the main building, a converted school. In less inclement weather, they can run the adjacent trail system.



"When you talk about relapse, the ability to recognize stress and manage it through exercise and diet is so key to people staying sober," says associate program director Gary Wand, himself a runner and in long-term recovery from addiction. "That's the big transformation I see. People are recognizing that I'm going to have more stress than the next guy because of my background, my history with drugs, and all the other related problems, but what works for me is a really good exercise program... With running and good nutrition, we're seeing people staying sober longer."

TWELVE STEPS VERSUS A MILLION

I DON'T WANT TO SUGGEST that running is inherently a better approach than others, such as AA. But 18 years down the road, it's played a leading role in my life, and for whatever reasons (perhaps divine grace), I never relapsed. When it comes

to sobriety, I'm a believer that we all must forge our own paths. For some, perhaps for many, running is just one of several tools. Plenty of runner friends in recovery whom I admire and respect swear by the 12-step approach.

"It's like when we treat cancer, we don't just give one chemotherapy agent, we give multiples," says NIDA's Volkow, herself a dedicated runner. "Same with HIV: Three antiviral remedies are given so the outcomes are much better. My perspective on addiction is the same. Addiction is a dangerous disease. Daniloff crosses It can have devastating consequences, including death, and you treat it aggressively. Not everybody responds to the same treatment approach, so in that respect it's no the Pikes Peak different from any other medical diseases."

I can understand why people think I've merely traded one addiction for another. But ultimately I find this thought too narrow. Unlike boozing, running has never filled me with shame or regret, not once turned me into a monster. I have never stolen, lied, or cheated for running. I don't need more miles to get the same effect. The trade that, literally, took place was sobriety for addiction, a dark central rhythm recast in light.

While not enough scientific studies have been conducted on the addictive qualities of exercise, I can see ways in which runningor rather, not running—has effects that can echo withdrawal. If I miss several days, I might feel a little sluggish, unfocused, sometimes irritable. I have sometimes found myself envious seeing other runners even if I'd laced up the day before.

"I would be cautious to say 'withdrawal,'" says Volkow. "That term is one I use with very specific connotations. But I can tell you that if I don't exercise, I actually feel very uncomfortable. Running gives me a great sense of well-being and calms me down."

Ironically, people recovering from addiction may even have an advantage when it comes to endurance sports, stemming from a personality that once chased drugs with bottomless zeal. In fact, certain "survival" skills developed in addiction—tolerance for pain, single-minded focus, ingenuity born of desperation, ease with isolation, a cold comfort with humiliation—can be harnessed on that 100-mile run or double triathlon.

I remember one morning when I was drinking, I showed up for a physical job, to help move several tons of hay, after a raging bender. It was Vermont in winter, and the cold only made my head ache more. I had slept only two drunken hours and made it to the job with what felt like battery acid in my belly. I soiled



the finish in

triumph at

Marathon

in 2013.

myself halfway through. But despite the shakes and existential crises spooling through my mind, I kept going-partly because going home sick would be a shameful admission of a problem and partly because I knew I had a six-pack waiting for me at the end. So today, to gird against giving up in the late stages of a race, I'll say to myself, You haven't even crapped yourself yet.

And sure, we roll with the punches. We get knocked down and continue to rise. "As addicts, we're subject to being easily devastated, and those setbacks can kill," says Charlie Engle, author of Running Man: A Memoir, which details his journey from crack addict to endurance athlete who

once ran across the Sahara Desert. He's an expert in the field of pain and, in his sober life, rising up against adversity (which for him included a stint in jail). It's something he's learned through running. "At least five times during an ultra, everything goes wrong," he says. "But I've learned that no single event is the end of the world." It's not that life

or the run need be perfect, he explains, it's how we adapt to the setbacks—and that we continue to run.

Volkow says that an intense drive, even compulsive patterns, should not necessarily be viewed as abnormal in the context of achieving athletic goals. "At the end of the day, there is a reason we have the capacity to sustain effort even when it's painful," she says.

Back in Colorado, as I begin zigzagging down from the Pikes Peak summit toward thicker air, I think about my past, my own toughness, my brain chemicals—hopefully on the normal spectrum by now—and the life that running has given me.

"Because it provides an advantage for survival."

During my drinking and drugging years, despite deep-seated insecurities, I fell under the spell of my own perceived grandeur. Now, I need to continually reinforce that I am no longer that degenerate loser I once was. This conflict in me still exists-corroding at my edges—at times drifting to the surface if I stay still for too long.

In this race, as all others, I will get passed. I'll struggle against giving up, with the limitations of my body. I'll assess my worth as an athlete, as a person. And that's why I run. For a sober person—hell, for anybody—the greatest gift running can give is its ability to render us human while simultaneously showing us the strength we have.

Running down the edge of this mountain, I look around at the terrain and at other people, runners who slap me on the back as they dash by. This is where joy is found. Out here. This moment. As long as I keep running, I can remain in this state—a state not only of moving forward, but of being. ...



THE HARDEST ULTRAMARATHON you've never heard of-the Iditarod Trail Invitationaltraverses roughly 1,000 miles through the Alaskan wilderness in February and March. Since 2000, just 15 runners have completed the route between Wasilla and Nome, and of the five or so participants who line up each year, fewer than half finish (all entrants must first complete the 350-mile version to prove their winter survival savvy). Dragging 35- to 55-pound sleds, competitors use GPS, maps, and advice from locals to follow the sporadically marked Iditarod Trail (the same one the mushers, who start a week later, follow). They cross mountain ranges, black pine forests, the frozen Yukon River, and iced-over stretches of the Bering Sea, restocking food supplies along the way in isolated villages or from three ski plane drops. Cutoff time in Nome is 30 days. Racers must hit 20 designated checkpoints and are allowed to go off-trail to shave miles between those points. Bailing out mid-journey requires schlepping to the nearest village—which can be up to 100 miles away—and paying for a bush plane ride back to Anchorage. This year's race starts February 26. Its seven participants will average 35 to 40 miles over 12 to 14 hours each day and finish in roughly 25 days. "The type of people who enter-if you tell them something is really, really hard, they'll want to do it even more," co-race director Bill Merchant says. "The Iditarod Trail can be the most beautiful place in the world or the most intimidating." Turn the page and see for yourself.

At the Iditarod Trail Invitational, the humans do all the work. Here's how and (best as we can tell) why.

By KIT FOX Photographs by BRIAN KALDORF



8 / WHITE MOUNTAIN (pop. 209)

Mile 898

Rest stop

For eight years, resident Joanna Wassillie, 47, has offered moose soup, roasted caribou, and her famous sticky rolls to competitors. She's got a spare bed for them, too. "They're doing something awesome," she says, "something I would have liked to have done."

NOME B

7 | ELIM (pop. 339) Mile 852

Eskimo village

Racers arrive here via stable ice close to shore on the bay. Tim Hewitt (below) is the only one to have cut across the bay, which shaved 40 miles. "You're on unmarked sea ice; it can separate and move out to sea or you could fall through it," Bill Merchant says. "That is a sketchy shortcut."

6/YUKON RIVER

Miles 545 to 629

Most mental stretch

More than a mile wide at spots, the river's vastness plays tricks on the mind. Ground blizzards can limit visibility from the chest down.

RUBY

6

5

OPHIR

FINISH

10/NOME

(pop. 3,777) Mile 1,000

The finish

The course ends under a wooden arch in front of a church and trading post on one of Nome's main drags, the same finish line as the Iditarod Trail Sled Dog Race. Typically, the last musher arrives about a week before the first ultramarathoner, which means the area is usually deserted. "The finish is fitting because it's such a solitary race," Jegerlehner says. "It's about you, your journey, and that's it."



9 / BLOWHOLE ALLEY

Miles 898 to 953 Most dangerous

In perfect conditions. racers see the frozen Bering Sea to their left. faraway hills to their right, and flat, exposed trail straight ahead. But this area is notorious for "blowholes," unpredictable blizzards with winds that can reach 75 mph for hours, creating whiteout conditions that obscure trail markers and threaten to blow competitors toward thin ice. The storms have such a defined edge. locals claim you can stick your hand in the billowing snow while the rest of your body remains in calm conditions. Three cabins along the route provide shelter if blowholes flare up (and if you can find them).



5/OPHIR TO RUBY (pop. 178)

Miles 425 to 545

Least-supported stretch

From the abandoned gold-rush town of Ophir, it takes about three days to cross this lonely stretch of hills and black spruce forest known for high winds and frigid temps that often dip to -40°F. With no protection, the wind can feel like "a knife just stabbing you repeatedly," says Jegerlehner (in furry hood, below left).



<u>Long way home</u>

THE RACE TO THE LONELIEST FINISH LINE OF THEM ALL BEGINS IN WASILLA, ALASKA, AND RUNS WEST. ENDING IN NOME.

QF JEGERLEHNER (OPHIR TO RUBY, YUKON





Sounds Like Fun How to train for the ITI

Course record holder Tim Hewitt says the methodology behind his training is painfully simple. "If I can run myself empty, I get stronger," he says. It helps that he's practiced in the art of suffering. A gymnast in college, Hewitt took up running after graduating in the early 1980s and has done more than 60 marathons and ultras, including the 135-mile Badwater Ultramarathon (twice). Starting six months before the Iditarod. Hewitt hits the mountains by his Pennsylvania home every weekend. He sometimes fills a backpack (as in the photo above) with 20 pounds of canned food to add weight. then runs and hikes trails for six to eight hours, often overnight to mimic the sleepless conditions he'll encounter in the race. After enough snow accumulates. he swaps the backpack for his sled, adding weight each week until he's used to his 40-pound racing load. The goal of these trips isn't so much to strengthen his aerobic capacity—that comes from running at least an hour a day during the week—but to get him used to physical and mental pain. That way, Hewitt says, the first week of the race is not so brutal, "Regardless of how I train, I get tougher as the race goes on."

MAP BY COMRADE APRIL 2017 RUNNER'S WORLD 79

COLD CALCULATIONS

SO WHAT DO YOU NEED to survive 1,000 miles in the Alaska tundra? **Tim Hewitt**, a 62-year-old lawyer from Greensburg, Pennsylvania, has a pretty good idea. Hewitt has completed the Iditarod Trail Invitational an unsurpassed nine times in the past 15 years, and he set the course record of 19 days, nine hours, 38 minutes in 2016. He's entered this year's event as a cyclist. Not surprisingly, the 40 pounds' worth of stuff that has kept him alive is durable, warm—and very light.



SLED (SEE PAGE 77)

Hewitt's handmade sled is 24 inches wide and 48 inches long, weighs 3.5 pounds, and is made of ultra-high-density polyethylene. (He named it "Cookie" after a husky in a children's book.) He pulls it using a homemade hip-harness that's connected to the sled by a rope covered in flexible PVC pipe for protection against the elements.

1/BASE LAYER

For 20 days, Hewitt's tights and long-sleeve top never come off. Once he finishes, they go straight in the trash (to his wife's relief). Over his tights go insulated and shell pants.

2 / NECK GAITER

"This is one of my secrets," he says. "Your neck is where your core heat is going to escape from because all the blood that goes to your brain goes through your neck. If you add clothing there, your whole body will warm up." So when his feet get cold, the gaiter goes on. On his head go a cap, up to two balaclavas (including one that's windproof), a headlamp, sunglasses, goggles, and lip balm.

3 / FOOD AND DRINK

In 2010, Hewitt pulled all his supplies for the entire trek (as opposed to having drop bags along the route). His sled weighed 110 pounds, 20 of which was crunchy peanut butter. In a typical day, he torches nearly 15,000 calories, and consumes at least 8,000. He also carries drink mixes, freeze-dried meals, jerky, bars, beans, nuts, candy, gum, and chocolate.

4 / FOAM SLEEPING PAD

Sleeping atop his sled saves Hewitt time pitching a tent, and the pad is a necessary buffer. He'll park the sled perpendicular to the wind and sleep in three- to four-hour increments. If it's too cold, he'll continue moving to keep his core temp up. Perpetually exhausted, he's been known to fall asleep standing upright.

5 / DOWN PARKA

Because down makes him sweat, Hewitt wears this only when he's not moving or needs to raise his body temperature. Upon waking, he'll often throw on the parka and run with his sled until he's warm enough to get fully dressed and packed up. "I

put my freezing shoes on and don't try to lace them, I don't try to organize anything, I just get moving," he says. He typically wears some combination of a lighter-weight jacket, fleece, and/or vest.

6/GPS

Natural barriers like creeks and hills cause the trail to meander, which can make using a GPS frustrating. Hewitt often relies more on personal experience and advice from locals. But when he got stuck in a blowhole at night, it was his GPS that got him out.

7 | SNOWSHOES AND POLES

Both help him navigate snow up to six feet deep.

8 / DOWN SLEEPING BAG

Hewitt's bag is functional to -60°F, but that doesn't mean he's toasty when it gets that cold. It just means he "won't die." Most mornings, Hewitt has to shake off the ice that forms when his body heat permeates the outer shell of the bag.

9 / TRAIL SHOES

Hewitt wears two pairs of Drymax socks and insulated sole inserts, so his Montrail trail shoes are one size bigger than his running shoes. He wears gaiters over his shoes to keep the snow out, and on the bottom of each sole, he installs 10 carbide screws for traction. One year, he sliced a quarter-inch layer of skin from one of his toes after it turned black with frostbite midrace. Now more sensitive to falling temps, that toe signals that his body is about to get (really) cold.

10 / CAMP STOVE

It takes Hewitt 30 minutes to melt enough snow to create 100 ounces of water, which lasts him 24 hours. His kitchen also includes a titanium pot and lid (and spork), an insulated mug, white gas, an insulated water bottle holder, and three packs of wind- and waterproof matches.

11 / MITTS

To regulate his temperature, Hewitt constantly removes one or both of his outer mitts in a process he calls "heat dumping." The liner stays on—a lesson he learned after losing "a good amount" of skin after his bare hand brushed a metal gas can.



ON THE RUN



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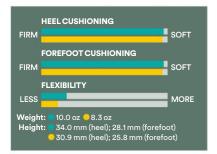






Brooks Caldera \$140

For ultrarunners and those spending long days on the trail, the Caldera is a soft option. The shoe has a wide base that makes full contact with the ground plus sticky rubber and multi-directional lugs to keep you upright on tricky terrain. Testers loved the comfort straight out of the box and the shoe's ability to deflect even the gnarliest rocks we regularly roll over in eastern Pennsylvania.





New Balance Fresh Foam Hierro v2 \$115

The Hierro is another ultra-distance option from New Balance. With a soft, fairly flexible sole, the Hierro offers protection for long efforts on rugged singletrack. The forefoot lugs are angled to pull you forward while the heel lugs bite solidly on descents. A beefed-up toe cap shields you from kicked rocks.





HOKA ONE ONE CHALLENGER ATR 3 \$130

We've liked previous versions of the Challenger ATR because it's a trail-worthy version of the lightweight, speedy Clifton road shoe. Our only gripe with those earlier models was a snug forefoot. For version 3, wear-testers reported that the toebox



felt roomy. It's one of the few tweaks Hoka made to this shoe, opting to leave much else as is, thankfully. The midsole and outsole are nearly identical to earlier versions, though the lugs in the middle of the forefoot have been spaced out to better shed mud. The upper is breathable yet more durable, thanks to 3D-printed overlays that help hold the foot steady on uneven terrain and fend off trailside sticks and debris.

TESTER'S TAKE

NAME: Daniel Talhelm AGE: 75 HEIGHT: 5'8" WEIGHT: 135 lb. MILES PER WEEK: 25 YEARS RUNNING: 38 HOME: East Lansing, MI OCCUPATION: Retired



"The Challenger is my go-to trainer for trails, dirt roads, and cross country. For a lightweight trail shoe, it feels surprisingly solid, comfortable, stable, and supportive. It grips and protects against rocks and roots. From hard intervals to long runs, these are efficient and comfortable."

LIGHTWEIGHT SHOES

BEST FOR BOTH TRAILS AND ROADS



Topo Athletic Terraventure \$110

The most cushioned Topo trail shoe, the Terraventure has the versatility to get you from the door to the trail. Its sole has lots of squared edges to keep you steady on loose ground, but the flat lugs are smooth over stretches of pavement. And of course, the shoe is lightweight—a trait of all Topos. A thin rock plate is molded into the forefoot of the midsole for extra protection.





Salomon S/Lab Sense Ultra \$180

The Sense line has been for the elite few—Killian Jornet types who float over trails in racing flats. This is for the rest of us. "It takes the best performance features of the S/Lab Sense 5 Ultra and adds cushion and protection for technical terrain," says Pat Heine, a 100-mile racer and video producer at our sibling magazine *Bicycling*.





SAUCONY PEREGRINE 7 \$120

The Peregrine is no stranger to awards—versions 4 and 6 claimed our Editor's Choice award. This update holds price steady for a second year and offers a lot of versatility. Saucony removed a block of bouncy foam from the heel but gave the



shoe a thin, full-length layer of the same material directly below the sockliner. In the RW Shoe Lab, we measured a dip in heel cushioning as a result, though wear-testers said the shoe feels responsive. The rest of the midsole and outsole remains unchanged, so you'll get that same solid grip in all conditions from the toothy rubber bottom. The upper has a durable thermoplastic polyurethane (TPU) wrap over the mesh.

TESTER'S TAKE

NAME: Leiah DeVito
AGE: 36 HEIGHT: 5'6"
WEIGHT: 120 lb.
MILES PER WEEK: 38
YEARS RUNNING: 19
HOME: Saranac, MI
OCCUPATION: Administra
tive assistant



"I love this shoe! It's one of my favorites of all time. You can run through any type of terrain and elements. With this version the cushioning was a huge difference. The shoe no longer feels stiff, but molds to your feet. The rock plate in the shoe is a godsend and doesn't make the shoe feel stiff."

LIGHTWEIGHT SHOES

BEST FOR BOTH
TRAILS AND ROADS



Scarpa Spin \$130

Trail runners may be unfamiliar with this Italian boot maker, but Scarpa's been crafting footwear for backcountry play—hiking, skiing, rock climbing—since 1938. In recent years we've seen some trail-running shoes from the brand, but the Spin has us most excited. It's a featherlight slipper meant for dancing fast over singletrack trails. A Vibram MegaGrip outsole holds up on rocks, while the welded upper creates a secure cage that wraps around the midfoot to keep you stable when the trail slants.



Inov-8 Roclite 290 \$120

The 290 in the name indicates the shoe's weight in grams, but in the RW Shoe Lab, we found our men's test sample (size 9) to check in about threetenths of an ounce lighter. Testers liked the rugged, mountain-worthy features, but wished for more cushioning on particularly nasty trails. All appreciated the toothy grip and secure, snug fit from the upper. "I like the low drop and good ground feel they provide without sacrificing protection," says Michelle Shultz, a 31-year-old physical therapist from Sinking Spring, PA.





Merrell Agility Peak Flex \$130

In an attempt to make this shoe flex both up and down—mimicking a bare foot—Merrell cut grooves into the top of the midsole foam to complement those under the sole. Tests in the RW Shoe Lab show traditional flexibility—bending the forefoot on toe-off—is stiff, and wear-testers reported a similar feeling. Likely contributing to this is the rock plate in both the heel and forefoot that shields your foot from rough trails. But testers gave it high marks for the balance of weight and cushioning that made the shoe smoothly conquer a variety of trails.





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MORE SHOES AND REVIEWS

In addition to the 12 models in this guide, our website gives you access to hundreds of shoes for the trail and roads. Go to runners world.com/shoefinder for more pairs that meet your needs.

VIDEO SPOTLIGHT

Runner's World Shoes & Gear Editor Jeff Dengate (left) takes a hands-on look at each shoe reviewed in these pages. Watch and learn more at runnersworld .com/shoeguide.

DRY YOUR SOGGY SHOES

Creek crossings, muddy trails, and rain showers can leave your shoes damp and stinky. Visit runnersworld.com/wetshoes for a gear hack to dry them quickly and keep them smelling fresh.



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Scott Supertrac RC \$150

RC stands for racing concept, and this speedster excels on technical territory. The deep lugs are spaced to shed mud, and they radiate in a circle out from under the base of the big toe, where you generate force on pushoff. The seamless upper and thin, grippy tongue smoothly lock down the foot when going full tilt. The midsole is fairly thick, but we found it rides pretty firm.





Mizuno Wave Daichi 2 \$130

The Daichi goes into its second season globally but makes its U.S. debut. The shoe is a sound all-arounder, with a multidirectional outsole that grips a wide range of surfaces and has plenty of cushioning for most terrain. The sole's X-shaped grooves under the midfoot allow the shoe to twist and bend, conforming to undulations in the trail.





VASQUE CONSTANT VELOCITY \$120

"A great shoe for those runners who like getting off the road and into some fun terrain," says Don Rochford, a police officer from Dewitt, MI. "It provided nice rigidity to protect my feet, yet has enough cushion for a decent ride." That's the



essence of this new shoe: It'll tackle whatever you throw at it. The sole has aggressive, clover-shaped lugs that perform as well on slick rocks as they do on scree. A rock plate in the forefoot shields your foot when scampering along rough ground, while the soft heel protects you when bombing downhill. The air-mesh upper is reinforced with hearty stitched-on overlays that will hold tightly for the life of the shoe.

TESTER'S TAKE

NAME: Michael Heimes AGE: 38 HEIGHT: 6'1" WEIGHT: 157 lb. MILES PER WEEK: 50 YEARS RUNNING: 23 HOME: Reading, PA OCCUPATION: Web developer



"It's a great utility shoe with adequate protection underfoot and tons of heel cushioning. I would wear this shoe in nearly all of my training runs and long races. It has ample cushioning while still feeling fairly fast and responsive. Unfortunately, there was no second top eyelet; I use a heel-lock."







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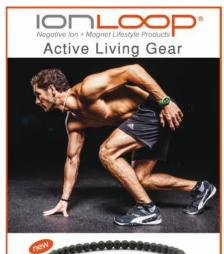


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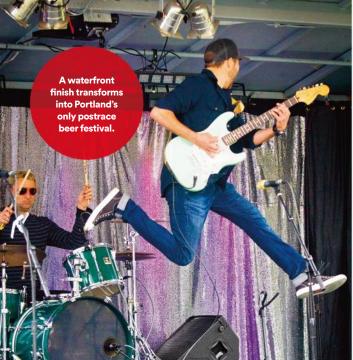
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With 70 breweries (the most of any city in the world), at least 19 running clubs, and proximity to Nike world headquarters, Portland, Oregon, is a mecca for beer and running. Lovers of both unite each April at the Bridge to Brews 10K & 8K. The 10-yearold race showcases Portlander essentials, from the artsy Pearl District, to skyline views on two bridges (Fremont and Steel), to-of course-the brews. Finishers get a pint and 10 three-ounce tastings from 10 to 15 local breweries (plus wineries and distilleries). On the opposite page, Oregonians toast this celebration of the region's favorite pastimes.



SHOWY START

"I enjoyed running through Old Town Chinatown and Portland's northwest neighborhoods during the first three miles. It's a very eclectic part of the city with historic, refurbished brick buildings that make for a colorful mix of old and new."

-LEILANI VANHOOMISSEN, 46, PORTLAND. OREGON

SPEEDY LOCALS

"The Portland running crowd is serious—full of employees from the several outdoor and athletic companies based here. Many of them use this race as a tuneup before marathons later in the season, which means you can expect good competition for overall and agegroup awards."

—JONATHAN HOFFMAN, 36, HILLSBORO, OREGON

ELEVATED VIEWS

"You can run over the other Portland bridges anytime (there are 12 spanning the Willamette River), but this is the only opportunity to run the Fremont Bridge, as it's closed to pedestrians the rest of the year. A lot of people stop to take a selfie because you get a really unique view looking south toward downtown and Mt. Hood."

-KRISTA HAGENBUCH RIDER, 47, PORTLAND, OREGON

A SMOOTH FINISH

"With a half mile left, the course cruises downhill off the Steel Bridge onto a short, flat stretch along the river. Then it's a short walk straight to the beer!" -KELLY BITHER, 51, TIGARD, OREGON



RECOVERY BUZZ

"The **beer** after the race tastes so delicious. And because the Pacific Northwest is the very center of hop-growing in the country, there are a ton of great, local choices (including Portland standards from Widmer Brothers Brewery and Burnside Brewing)."

-LUCY BURNINGHAM, 40, PORTLAND, OREGON

REFUEL

Gorge at ¿Por Qué No? Taqueria, a local haunt across the river from the finish. porquenotacos.com



Ask a Dietitian **Natalie Rizzo explains** the buzz around beer after a race.

Is there any redeeming value to postrace beer?

A little. Beer does contain carbs, and one of the things you want to do postrace is replenish the glycogen (otherwise known as carbs) in your muscles.

What's the smartest way to approach a beer-fueled after-party?

Put real food in your stomach first so it can slow the absorption of alcohol into the blood stream. Aim for protein or healthy fats—chocolate milk, nuts, peanut butter, or a granola bar. Drinking after a hard effort, and likely on an empty stomach, can leave you feeling woozy and tired. Not to mention you owe your body some nutrients to start the healing process.

Any drinking strategies that you recommend?

Water! Or a sports drink. Remember, you just ran a race, which means you're probably dehydrated. Downing beers will exacerbate that dehydration. So while you're eating your real food, be sure to drink water or an electrolyte replacement as well. Alternate those beverages with your brewsyou'll likely consume less alcohol and help hasten your recovery.

Natalie Rizzo is a New York City-based registered dietitian who advises runners at nutritionalanatalie.com.

Where To? The destination is all in the name.

DAM TO DAM HALF MARATHON

Starting on the Saylorville Dam with views of the Des Moines-River, this point-to-point course winds through lush countryside, leading runners past famous city landmarks like the arched lowa Women of Achievement Bridge.

June 3 Des Moines Iowa damtodam.com



RACE TO WRIGLEY 5K

Fans of the reigning World Series champs loop 3.1 miles around Chicago's Lakeview neighborhood before entering Wrigley Field itself for almost a quarter mile. The race finishes with views of the ballpark's famous red sign.

April 29, Chicago race-cubs.com

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JUN 11 - Walkway Marathon, Half Marathon

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APR 29 - Park to Park Half Marathon

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SEP 16 - Air Force Marathon, Half Marathon, 10K & 5K

Dayton, OH

Contact: Race Director. 5030 Pearson Rd., Building 219,

Wright-Patterson AFB, OH 45433. (937) 257-4350

usaf.marathon@us.af.mil www.usafmarathon.com

OCT 14-15 - IMT Des Moines Marathon, Half Marathon, 5M & 5K

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South Lake Tahoe, CA Contact: Les Wright, P.O. Box 20000, South Lake Tahoe, CA 96151. (530) 559-2261 leswright@sbcglobal.net www.runtahoe.com

JAN 14, 2018 - Maui OceanFront Marathon, Half Marathon, 15K, 10K & 5K

Lahaina, HI
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South Lake Tahoe, CA 96151.
(530) 559-2261
runmaui@gmail.com
www.runmaui.com

INTERNATIONAL

MAY 7 - GoodLife Fitness Toronto Marathon, Half Marathon, 10K, 5K Run and Walk & Relay

Toronto, ON, Canada Contact: Jay Glassman, PO Box 1240, Stn Main, Uxbridge, ON L9P 1N5. (416) 920-3466 info@torontomarathon.com

OCT 22 - Scotiabank Toronto Waterfront Marathon, Half Marathon & 5K

Toronto, ON, Canada Contact: Ian Carter, 264 The Esplanade, Toronto, ON M5A 4J6. (416) 944-2765 info@canadarunningseries.com www.STWM.ca

NOV 5 - Divas® Half Marathon & 5K in Puerto Rico

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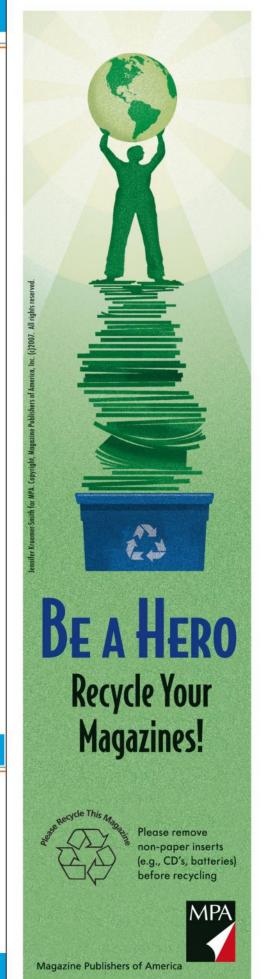
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ROBYN O'BRIEN

FOOD INDUSTRY ANALYST AND AUTHOR, 45, BOULDER, COLORADO



WHEN I RUN. I have my most unbridled thoughts. It's a brainstorming session, as well as a time to process any issues that may be presenting in my work as a food analyst and activist.

I STARTED running in middle school. In high school track, my coach gave me the nickname "The Smiling Miler" because I was always smiling and just wanted to race. I ran the mile or two-mile.

EVER SINCE, I've used running to process just about every major event in my life. I use it to process stress or joy!

WHEN I WAS YOUNGER. I listened to Michael Jackson on runs. When Robyn O'Brien is a leading voice in food-industry reform. Her 2009 book *The* Unhealthy Truth led to her being known as "food's Erin Brockovich." Prince died, I downloaded a whole album of his. But I always start my runs with this guy named Shaggy.

OUR AMERICAN FOOD companies use artificial ingredients that aren't allowed in products overseas. It's up to us to make smarter choices whenever possible.

DON'T MAKE PERFECT the enemy of good, but eat less fake food.

I RAN THE day I did my very first CNN interview. I ran on my wedding day. I ran the day I graduated from college. I'm 45 and I've been running for 33 years. Honestly, it's always just been a total love affair.

WHEN MY HUSBAND and I first started dating, he asked if I'd ever run a marathon. I said no but it was on my bucket list, so he asked if I wanted to run Houston. **WE FINISHED** right around four hours. My parents said, "This guy is in for the long haul if he's running a marathon with our daughter!" That was 22 years ago.

NOW I'M A PARENT, and every single day is filled with curveballs. But your happiness depends on how you handle it all. It's kind of like the oxygen masks on airplanes. If you don't take good care of yourself, you're not in a healthy mental or physical place to take care of your family.

BOULDER IS just stunning. Even after 17 years, I still take pictures of my outdoor runs because it's so beautiful. Whether I'm in Houston on the old loop I used to run in high school or traveling abroad, I'm grateful for the ability to move my body to see the world. M

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