RUNNER'S WORLDUSA

THE TEST ZONE

NOTES, OPINIONS, USEFUL TIPS, AND THE COOLEST GEAR FROM INSIDE THE WORLD'S MOST RIGOROUS SHOE AND GEAR TESTING LAB

The soft laces are sticky through the eyelets, holding firm when you cinch them down.

SKECHERS GORUN SPEED FREEK

PRICE: $200 | **TYPE:** Road | **DROP:** 4 mm
WEIGHT: 7.0 oz (M), 5.8 oz (W)

LET IT BE known: 2021 is the year the racing flat has officially been declared dead. Conventional wisdom held that to make a shoe faster, you had to make it lighter. That always meant you'd lace up a shoe with a paper-thin sole on race day—it was, literally, flat compared to the profile of your trainers. But with the wave of new midsole foams, we've discovered that cush is king—even on race day. Skechers has been working with one of those new formulations, which it calls Hyperburst, with wonderful success. For its previous top-of-the-line racer, the Speed Elite, it used a moderate amount of foam that, in the end, proved to be too little for going long distances on pavement. It was too much like a traditional racing flat. Enter

PHOTOGRAPHY BY **TREVOR RAAB**

the Speed Freek, which is basically the same shoe but with a thicker sole. That extra cushion costs you another $10 and tacks on an ounce of weight. But it makes a huge difference in how far you can run at top speed: Unlike the Speed Elite that we only really employ for 5K or, maybe, 10K road races, the Speed Freek is easily capable of going a full marathon.

The magic of the shoe lies in that midsole. The supercritical foam is still made from EVA, the same stuff shoes have used for decades, but the mechanical process by which it's blown makes it lighter and more resilient than that made by the old method. Embedded within the forefoot are carbon-fiber winglets, Skechers's approach to rigidity. Rather than using a thin full-length plate, it opted to stiffen up only the front half of the shoe, and only at the edges. The banana-shaped pieces give the shoe incredible snap when you're running at a hard effort, yet allow the forefoot to feel more compliant and flexible as you roll from your midfoot onto your toes.

The addition of a rockered sole that Skechers calls Hyper Arc (a rebranding of M-Strike, for longtime Skechers wearers) also makes the shoe feel like it glides along more effortlessly than the Speed Elite. It's technically not one curve like a traditional rocker, but small arcs under the three sections of your foot—heel, midfoot, and ball. In function, though, we find that it's most noticeable through the midfoot. I feel my initial contact is more pronounced there; I'm usually a slight heel-striker in shoes with a flatter silhouette.

Testers all loved the monomesh upper, which is exceptionally thin and lightweight. It absolutely locks to the back half of your foot. The fit is so snug that I can't just kick off the shoe without untying the laces like I usually do with my shoes. (Note: This is a bad habit. I suggest you always untie your shoes so you don't shred the collar lining and break down the padded or supportive elements.) The only knock on the shoe is about durability concerns. Testers worried the upper is too flimsy to last, but given that this is a racing shoe, it's appropriately built. The sole will certainly get worn down with high mileage, just like we experienced on the Speed Elite—one tester chewed straight through to the winglets on that test pair. Another tester saw the outsole of the Speed Freek start to peel off during his month of testing.—*Jeff Dengate*

MIZUNO WAVE RIDER 25

PRICE: $135 | **TYPE:** Road | **DROP:** 12 mm
WEIGHT: 9.7 oz (M), 8.1 oz (W)

TWENTY-FIVE MARKS A huge milestone for the Rider. One longtime tester pegged this version as his favorite yet. As a wearer of the Rider since its 13th version, I can vouch that it's definitely the softest and most cushioned Rider I've ever worn. That in part is because the brand delivered on the promise it teased us with in the Rider 24: a full-length midsole layer of luxuriously soft Enerzy foam. In previous Riders, the midsole featured a mix of foams—ranging from its firmer U4ic to TPU-bead based XPOP—both above and below the wave plate. Though comfortable underfoot, the combination of different foams made the shoe's ride feel a bit disjointed. Depending on whether runners landed on the heel or closer to the forefoot, testers felt a slow or messy transition between touchdown and toe-off. With only Enerzy foam throughout, the ride is smoother and more consistent—especially when paired with the 25's new castor bean–based Wave plate. Built at a higher amplitude (the Rider 24's plate was flatter), it helps return more energy with each footstrike, and more closely matches the shape of the arch. "This shoe was a blast from the past, like finding an old pal once again and rekindling a great friendship," one tester said after a long hiatus from the Rider line. "Smooth and springy, the 25 makes a comfortable ride for endurance work and longer runs when you'll be spending a lot of time on your feet."—*Morgan Petruny*

ON CLOUDSTRATUS

PRICE: $170 | **TYPE:** Road | **DROP:** 8 mm
WEIGHT: 10.7 oz (M), 9.5 oz (W)

ON'S MIDSOLE CUSHIONING consistently surprises runners who expect a quintessential running-on-clouds sensation. The unique hollow pods are made from Helion, a blend of EVA and OBC (Olefin Block Copolymer)—essentially, it's a mix of one stiff material and one soft material in a single compound. Though the midsole provides ample cushioning, it's not the super plush and bouncy feeling you'd imagine underfoot while sailing through big, fluffy cotton-candy skies. Even with a double layer of the pods underfoot, the Cloudstratus best serves runners who dig a firm ride for long runs. It's also a great option for heavier runners who feel under-supported by softer, squishy midsoles. Since the Cloudstratus is no featherweight, On uses both a rockered midsole and a customized plastic plate, called a Speedboard, to smooth and quicken transitions. By injecting it with liquid, On can tune the board's thickness, arc, flexibility, and torsion to each shoe's specific use. The Cloudstratus's Speedboard feels peppy on toe-off and noticeably stiff—especially to testers of smaller stature—for support that doesn't slow down turnover. (We also caught midrun glimpses of the board whenever we stopped to remove rocks trapped in the outsole groove, our testers' most frequently reported issue.) "I liked the responsiveness and rebound of this shoe," one said. "Though I definitely felt the stiffness underfoot, this shoe did a good job of returning energy and didn't feel sluggish."—*M.P.*

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HOKA BONDI X

PRICE: $200 | **TYPE:** Road | **DROP:** 5 mm
WEIGHT: 10.6 oz (M), 9.1 oz (W)

THE BONDI IS the shoe generally associated with Hoka: extra thick and extra soft. While that usually means the shoe is comfortable, those characteristics can also make it slow. Surprisingly, not in this X version: Hoka has tinkered with its signature model to make it, dare we say, have the kind of propulsive edge we've found on the company's more performance-driven kicks.

It's the latest paradox in running shoes: extremely soft, yet speedy—if pricey. Hoka revved up the Bondi by embedding a carbon-fiber plate in the compression-molded EVA midsole, which is similar to the foam used in the Carbon X and Rocket X (shoes for the PR-minded). Like the OG Bondi, it has a rockered sole for a smooth heel-to-toe roll, but the carbon-fiber plate promotes a more aggressive toe-off. And while the sole still looks chunky, every part has a purpose. For example, the slab of heel foam absorbs impact as the "swallowtail" grooves on the sides smooth out the landing and make for an energetic ride.

We attribute "bouncy ride" to many of the plush shoes we cover, and the X delivers that jaunty, springy experience even though it's not *really* meant for channeling your inner speed demon; the shoe presses you swiftly onward like a locomotive on cloud-like foam. That was the common feedback from our testers when describing what it's like running in the Bondi X. "Wearing the shoe gives you a bouncy, running-on-clouds ride, but one that pushes you forward and propels your cadence," said a tester. "It felt comfortable and fast, especially on flat surfaces."

Larger runners who prefer soft cushioning might opt to race in this shoe, but it's quite a lot of foam to push hard during speed sessions. For a smaller runner like myself, the shoes are behemoths on my 5-foot frame, though I appreciated their performance on long runs. In fact, I looked forward to how comfortable my feet felt in their foamy beds and liked that my battered knees weren't aching by the time I got to the turnaround point of my out-and-back runs. Other testers had similar experiences. "I feel like Hoka struck a nice balance between soft and supportive," said one. "I would not grab these shoes for speedwork, but their cushioning sure makes them attractive for long runs." If you're recovering from an injury (that thick sole is also easy on the arches) or just want a soft yet energetic daily run, reach for the Bondi X. It'll be your hype man in shoe form when you want to tack on extra miles.—*Amanda Furrer*

ASICS NOVABLAST 2

PRICE: $130 | **TYPE:** Road | **DROP:** 8 mm
WEIGHT: 9.7 oz (M), 7.8 oz (W)

WORDS LIKE "RELIABLE," "workhorse," and "supportive" have long dominated the feedback from runners who wear-test Asics's trainers. Those are all worthy descriptors, but when's the last time you used the word "fun" to describe a pair of GT-2000s? (In reference to the ride, not the color.) Unless you've run in Asics recently, the answer is probably "never."

The brand's rep began to change in 2020 with the first Novablast, a rogue model so different from traditional offerings that some runners hardly recognized it as an Asics. The hefty midsole protruded at angles that looked like the surface of the Epcot ball, and gone were Asics's familiar support features like guidance trusses and medial posts. Instead, the Novablast rode sky-high on 33 millimeters of a new FlyteFoam Blast midsole, a wickedly bouncy mix of EVA and Olefin Block Copolymer. It was undoubtedly an exciting shoe to run in, but about as stable as a vat of radioactive plutonium. Neutral runners and overpronators alike found the shoe unpredictable on landings and wobbly around corners.

For the sequel, Asics reigned in that reckless ride with a more supportive midsole. Designers carved out some foam from the lateral sidewalls, and added more foam to the medial side to help keep the shoe from collapsing inward as you roll through your stride. The shoe's platform is now wider, the drop is lower (down to 8 mm from 10 mm), and more stabilizing TPU overlays bolster the heel. The midsole foam itself has the same chemistry, so the ride feels just as springy and energetic, but is more controlled underfoot. Testers noticed the difference. Whereas the first version was "squirrelly on steeply-graded roads and uneven sidewalks," testers in the 2 felt "well-supported and securely locked onto the plush cushioning."

Still, the Novablast is not a stability shoe by any means, and we don't prefer it for night runs on shifting gravel or when hopping curbs in the city. Take the Novablast out for long runs at a steady clip, when you want to simply zone out and set the cruise control. Why? Because the midsole truly does feel "trampoline-like." Upon landing, you sink into the foam slightly before rebounding—a sensation that reminded one tester of loping across a birthday party bounce house. An isolated pod of rubber beneath the forefoot adds a final unexpected pop on toe-off. Once you hit your stride and lock into a consistent cadence, the shoe feels propulsive and carries you forward smoothly. The drawback is that if you want to speed up, you'll notice a bit of a lag when switching gears during speed intervals or minute-on, minute-off fartleks.—*M.P.*

TESTZONE

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Why Runners Should Wear Wool

AROUND 80 PERCENT of our heat dissipation while exercising comes not from sweating, but from sweat evaporating off the skin. Clothing, especially winter layering, is a barrier that traps heat, air, and moisture, creating what textile researchers call a "microclimate" between the skin and the inner face of the fabric. As heat and moisture build, humidity rises, hindering evaporation and, therefore, the skin's ability to cool the body. One functional fabric works with the body's efforts to thermoregulate in the cold and, yes, the heat: wool.

Research in performance apparel has shown that wool fibers pull moisture from that microclimate. This lowers humidity, allows sweat to evaporate faster, and cools skin temperature—which is what we sense when we're feeling intensely hot during exercise. Dr. Raechel Laing, professor emeritus at the University of Otago in New Zealand, found while researching wool as a performance fabric that polyester shirts induced slightly higher skin temperatures, earlier sweating, more feelings of wetness, and higher heart rates, and led subjects to report greater perceived effort. "Wearing garments made in wool single jersey seems to lead to a generally lesser physiological demand during exercise in both hot and cold conditions," Laing concludes.—*John Tyler Allen*

PHOTOGRAPHY BY **TREVOR RAAB**

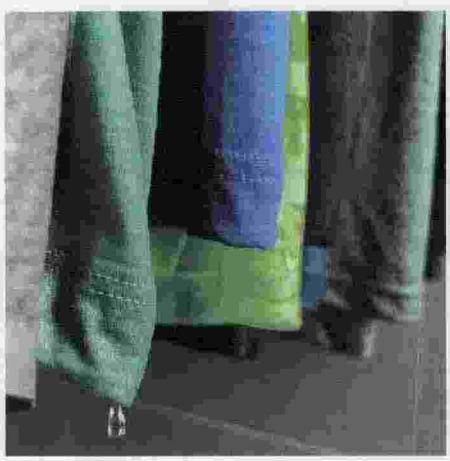
TEST ZONE

Nature's Wonder Fiber

LIMITING WOOL TO winter use is an old idea. Since the mid-1900s, wool's reputation has been stubbornly knit to the stifling acupuncture of an old wool sweater. But wool is different now: Research and breeding continue to refine the fibers.

"These fine fibers, twisted tightly, can be knitted into very fine fabric structures that are used in sportswear," says Laing. Decades of being mislabeled and misunderstood have curbed wool's adoption into the world of performance fabrics, but now, "nature's wonder fiber," as it's been called, is gaining acceptance in the form of lightweight merino.

The case for wool is rooted in the unique architecture of its fibers: A hydrophilic, water-attracting core is covered by water-repelling hydrophobic scales like shingles on a house. Small gaps between the scales allow the hydrophilic core to draw in water vapor while the hydrophobic exterior causes water droplets to bead and run off. This structure gives wool fibers their famous ability to absorb 35 percent of their weight in water vapor while remaining dry to the touch. The chemical process driving absorption also generates a whisper of heat that can prevent chilling drops in skin temperature, and the fibers' natural crimp prevents them from uniformly interlacing, which creates insulating air pockets when they're spun into yarn.



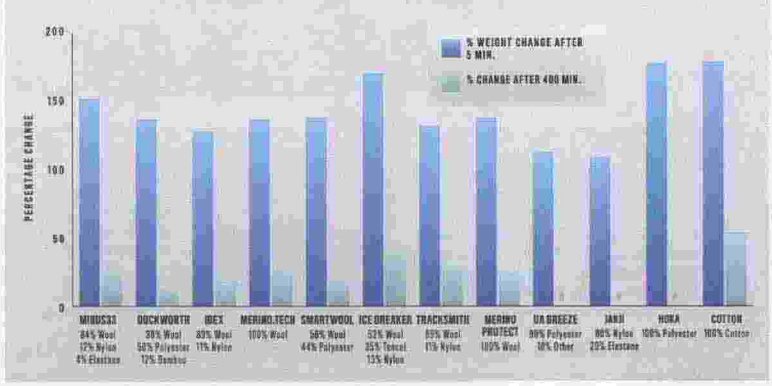
HOW WE TESTED

Even though wool's absorption capacity is so regularly cited as its advantage over other fabrics, few sound studies exist comparing this or wool's other moisture-management properties to those of other performance fabrics. To get an idea of how much sweat each of these shirts could hold relative to the others, I tested them myself in a lab (i.e., my kitchen).

LAB: My experiment tested various short-sleeve wool shirts alongside tops made from polyester, nylon, and cotton. I fully submerged the shirts in a tub of water for 30 minutes, removed them from the tub, allowed excess water to run off for five minutes, weighed them to establish the maximum amount of water held in and between the fibers, and then weighed them at 30-minute intervals until at least one reached its original dry weight. I scored their breathability, moisture management, and heat dissipation on a basic 1-to-10 scale, with 1 being the lowest and 10 the highest.

The wool shirts held 30 to 40 percent more water by weight than two of the three synthetics—Janji's nylon AFO Vent Tee and Under Armour's vanishingly thin, polyester Breeze Run Short Sleeve—and took around 15 to 30 percent longer to dry. Interestingly, though, they all dried at the same rate. Hoka's polyester Performance Short Sleeve absorbed a staggering 178 percent of its weight in water, as much as a cotton shirt (I tested it twice to be sure), but dried as fast as the other synthetics.

ROAD, Hudson River Greenway, NYC: (four to eight miles, 80-plus degrees) A pattern emerged as I tested the wool shirts. A radiant heat would build and then subside during the first mile, I'd feel dry a mile or two longer than when wearing the synthetics, and I'd finish my runs feeling drier because, while still wet, the wool never stuck to my skin. The blended fabrics proved more breathable than 100 percent wool. After a month, my unwashed wool still smelled clean (the scaled surface on wool fibers discourages bacterial growth). Wool's other reputation, its prickle, barely and only briefly registered.—*J.T.A.*



John Tyler Allen (How We Tested)

OUR TOP WOOL PERFORMERS

DUCKWORTH VAPOR / $65 (SHORT-SLEEVE) / $80 (LONG-SLEEVE) The Vapor strikes a delicate balance: thin enough to breathe, yet dry for miles; soft enough to wear all day, but still durable enough to hold its shape when wet.

MINUS33 WOOLVERINO / $65 (SHORT-SLEEVE) / $75 (LONG-SLEEVE 1/4-ZIP) Made from superfine merino fibers, the silky soft fabric is prickle-free and feather-weight. The compromise of airy and absorbent is a bit of sag when soaked.

SMARTWOOL MERINO SPORT 150 / $65 (SHORT-SLEEVE) / $85 (LONG-SLEEVE) Thin and tightly knit, this fabric is less breathable than others we tested, but was coolest to the touch, ran lighter, and, in the lab, felt drier sooner than most.

TESTER NOTES

INSIGHT, EVALUATIONS, AND HELPFUL TIPS STRAIGHT FROM THE NOTEBOOKS OF OUR STAFF, MEMBERS, AND 250-RUNNER-STRONG WEAR-TESTING TEAM

HOW TOUGH WE TEST: A SKECHERS DURABILITY CASE STUDY

Since its founding in 1992, Skechers has come a long way from "Shape-Ups" sandals and blinking midsoles. The same big "S" logo remains, but the brand has become a major player in the running industry due to its new PR-worthy shoes. It builds lightweight, go-fast racers with one trade-off: durability. Here's how three of our wear-testers shredded their review models.

TREVOR CONDE, 32

TYPICAL WEEKLY MILEAGE: 80
GAIT STYLE: Neutral, Midfoot Strike
SHOE: Razor Excess

"The full-length Goodyear rubber outsole held up much better than shoes with exposed foam that I've worn. My durability issue was the midsole-to-upper connection. The shoe was splitting apart at the seams after only about 100 miles of use."

CORY GOLDEN, 34

TYPICAL WEEKLY MILEAGE: 75
GAIT STYLE: Neutral, Forefoot Strike
SHOE: Speed Elite Hyper

"The EVA layer between the carbon-fiber winglets and the outsole was so thin that it wore down in almost two runs. By the third run, I was touching carbon. After 185 miles, the shoe looked like it had been hacksawed, but it was just from normal training."

TIM O'CONNOR, 47

TYPICAL WEEKLY MILEAGE: 30
GAIT STYLE: Neutral, Heel Strike
SHOE: Speed Freek (review on page 73)

"The Speed Freek isn't nearly as durable as the Ride 9, a daily trainer I just tested and like for its ability to withstand a heel-striking runner like me. It was great on runs of four to eight miles, but by the time I put 100 miles on it, the outsole, especially at the heel, had peeled away and scuffed the ground as I landed. If I used these shoes exclusively for racing, I'd only be able to wear them for about four marathons."

The Most Expensive Shoe We've Tested: Speedland SL:PDX

SAMPLE TEST CONDITIONS

TERRAIN: Dry, rocky trails
RUN DURATION: 10 miles
TIME OF DAY: 8:16 a.m.
TEMPERATURE: 70°F, partly cloudy

When Nike released the Vaporfly 4% at $250, it opened the door for other brands to use expensive materials and drive up prices. The Vaporfly delivered real speed, which made it worth the cost for many competitive runners. But in my testing, the $375 Speedland SL:PDX didn't deliver any edge for me over my running mates who logged miles on the same rocky Hamburg, Pennsylvania, trails in conventional shoes. For example: There are next to no instances where you need Pebax cushioning, a Carbitex plate, Dyneema upper, two Boa dials, and cuttable lugs all at the same time. Some of those parts for certain situations? Sure. But all together? Nah.

The Michelin outsole (lugs at full length) performed wonderfully on the scramble and hike up a mountain. But the thin, squishy Pebax sole was no match for the rocks on the way down—I got a number of heel shots right through the hole where the plate attaches to the foam. And did I need the carbon-fiber plate? Not at 14 minutes per mile. But without it, my soles would have been toast on that rocky terrain.

That surface might prove too much for those side-mounted Boa dials: I bashed them on rocks many times going up and down hills. They held up fine over one run, but I have concerns about durability in such terrain with regular use. (You can tie traditional laces together and carry on, but with a broken Boa, you're limping out of the woods.)

You can customize the SL:PDX, but only to a point. Say you cut the lugs down so you have a better experience on hard-packed surfaces, like the canal path I ran along. Now you're stuck with a very expensive shoe that does only that. If you want to run soft, muddy trails, you'll need longer lugs.—*Jeff Dengate*

Trevor Raab (Speedland: Fitbit); Courtesy Trevor Conde (Razor Excess); Courtesy Cory Golden (Speed Elite Hyper); Courtesy Tim O'Connor (Speed Freek)

CAN A FITNESS TRACKER REPLACE YOUR DEDICATED RUNNING WATCH?

SAMPLE TEST CONDITIONS

TERRAIN: Sidewalk and pavement
RUN DURATION: 12 miles
TIME OF DAY: Early morning
TEMPERATURE: 75°F, cloudy

Fitbit's models track quick daily runs well, but I wanted to see if the Charge 5 could handle Long Run Sunday.

THE RESULTS // Accurate in clear, open skies, the GPS briefly lost signal on deserted golf-cart paths on this overcast morning. And the heart rate spiked into "peak" zone though I was loping along at easy pace. Its contactless-pay option let me buy a grape Powerade quickly, and the sleep tracker caught my postrun nap! But by that time, the battery was down to 65 percent.—*Morgan Petruny*

PROS:
- ✓ SLEEP TRACKING
- ✓ ECG SCAN
- ✓ VO, MAX ESTIMATOR
- ✓ READINESS SCORE

CONS:
- X SHORT BATTERY LIFE
- X TOUCHSCREEN LAG
- X SMALL DISPLAY
- X HEART-RATE ACCURACY