

Flatland Fitness Guide

Structured Treadmill & StairMaster Workouts for Hikers & Backpackers



NO MOUNTAINS? NO PROBLEM!

Not everyone lives near trails or mountain terrain—but that doesn't mean you can't build serious uphill strength and endurance. At OAT, we understand the challenge of training for mountain adventures when you live in flat regions. That's why we've developed science-based workouts using incline treadmills, StairMasters, and even local stairs to help you gain vertical fitness right where you are.

INCLINE TREADMILL

Build uphill endurance and prep your legs for sustained climbs, dialing in precise incline and speed for targeted training

STAIRMASTER

Simulates steep mountain terrain, boosting uphill strength, power, and cardiovascular endurance right at your gym.

FIND SOME STAIRS!

Develops practical strength, balance, and stability—ideal for preparing your legs for uneven trails and long descents.

INCLINE TREADMILL

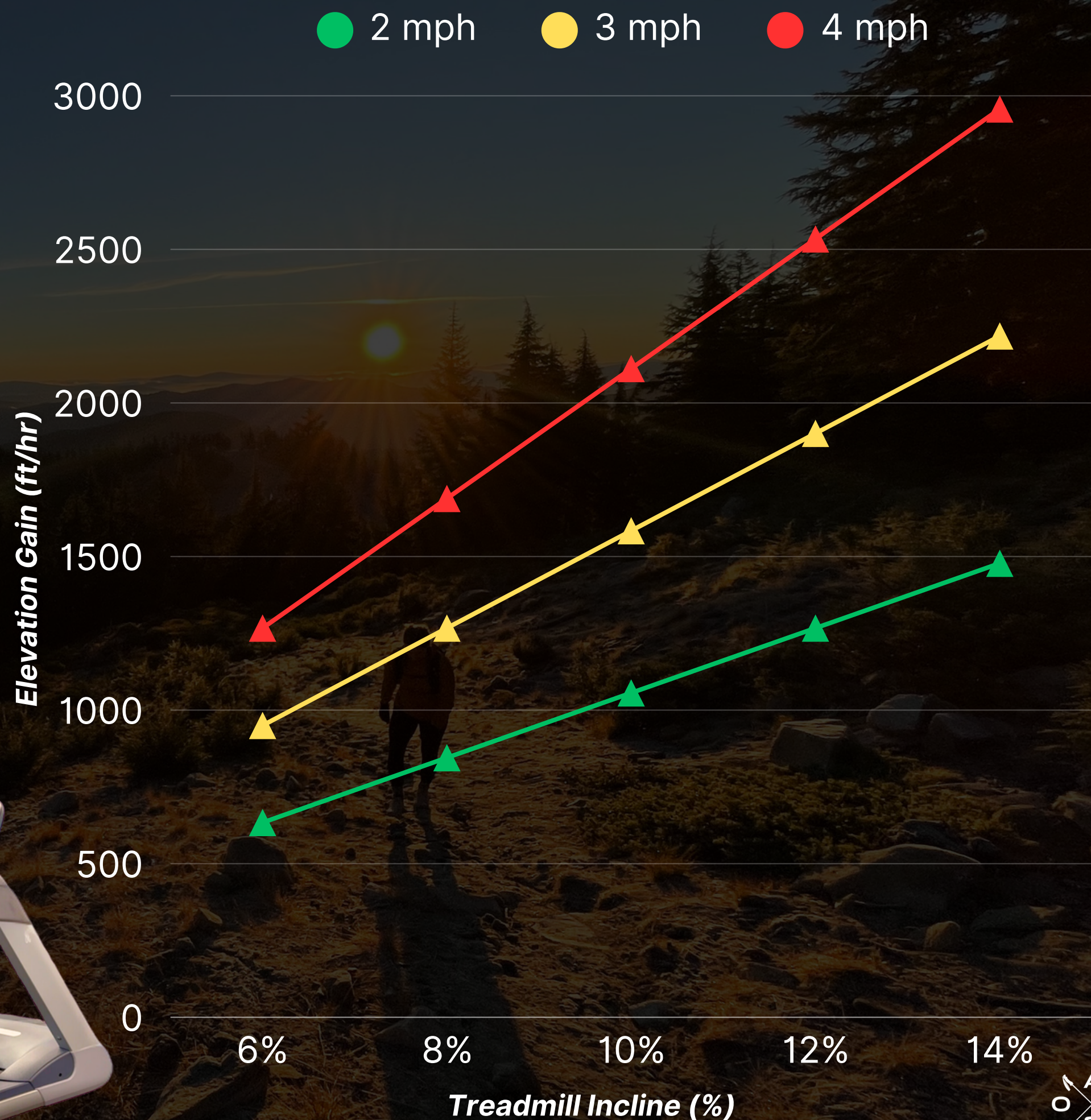
Whether you live far from mountains or simply don't have enough time to regularly hit the trails, a treadmill with adjustable incline (ideally 10% to 15% or more) is your best friend for mountain fitness. Look for easy incline controls, stable belt traction, and a sturdy frame for prolonged uphill training sessions. Use this chart to dial in your treadmill settings and pace, perfectly aligning your indoor workouts with your outdoor pursuits.

Key Points

- Accurately simulate elevation gain for targeted training.
- Easily increase training intensity by incorporating a weighted backpack, mimicking realistic backpacking conditions.
- Track and measure your progress consistently.



How Treadmill Incline and Pace Impact Elevation Gain



THE STAIRMASTER

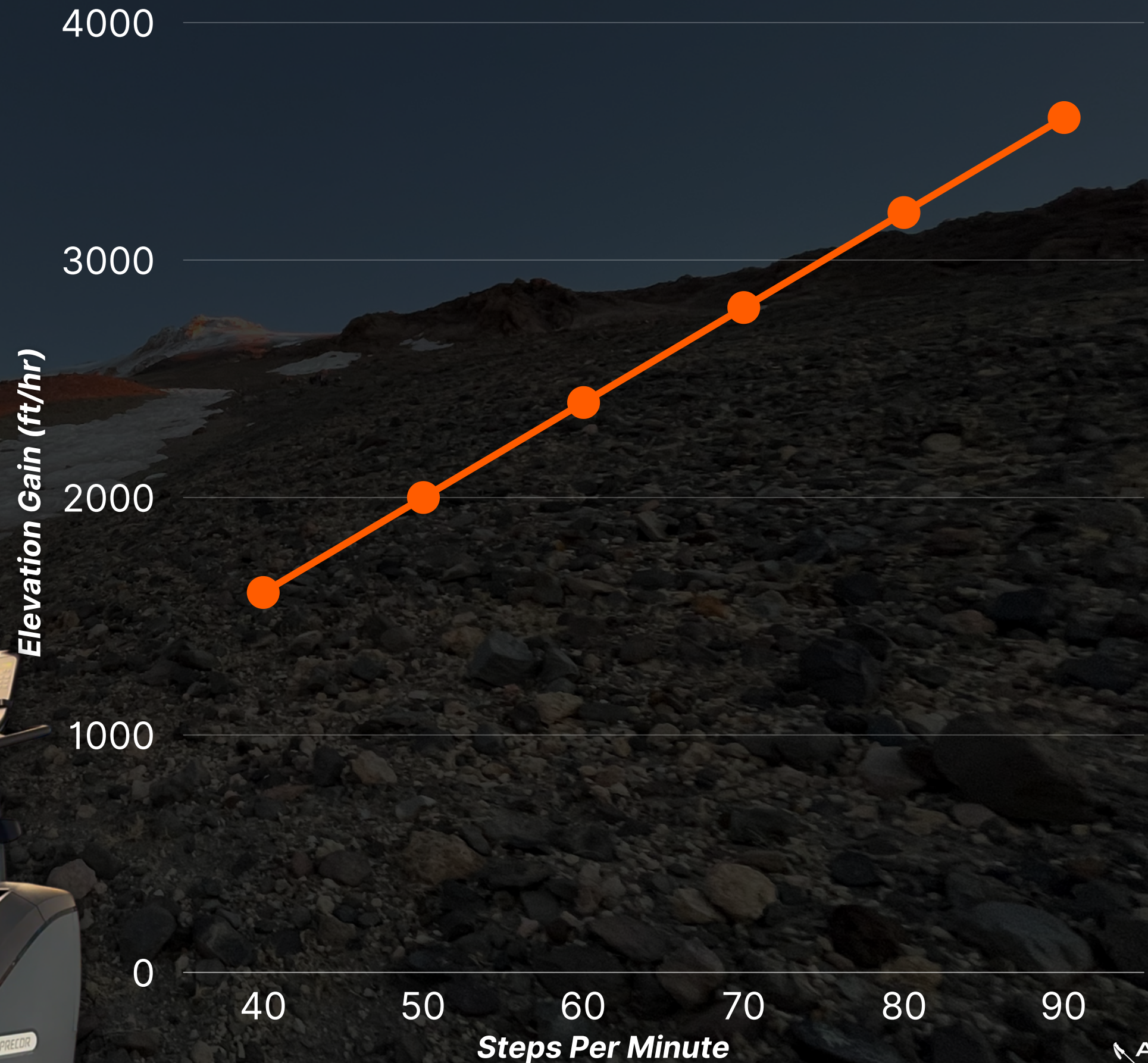
The StairMaster is a powerhouse tool for mountain athletes who need serious elevation training without mountain access. Its consistent step height and controlled pace effectively replicate steep climbs, helping you build the strength and endurance required for any ascent. Use this chart to precisely track and elevate your indoor training, ensuring every step counts toward your mountain objectives.

Key Points

- Build uphill strength and muscular endurance efficiently.
- Train consistently with controlled, repeatable conditions.
- Safely simulate steep climbs and maximize cardiovascular conditioning.

How StairMaster Pace Impacts Elevation Gain

● Vertical Gain (ft/hr)



****Based on 8" Steps****



FIND SOME STAIRS!

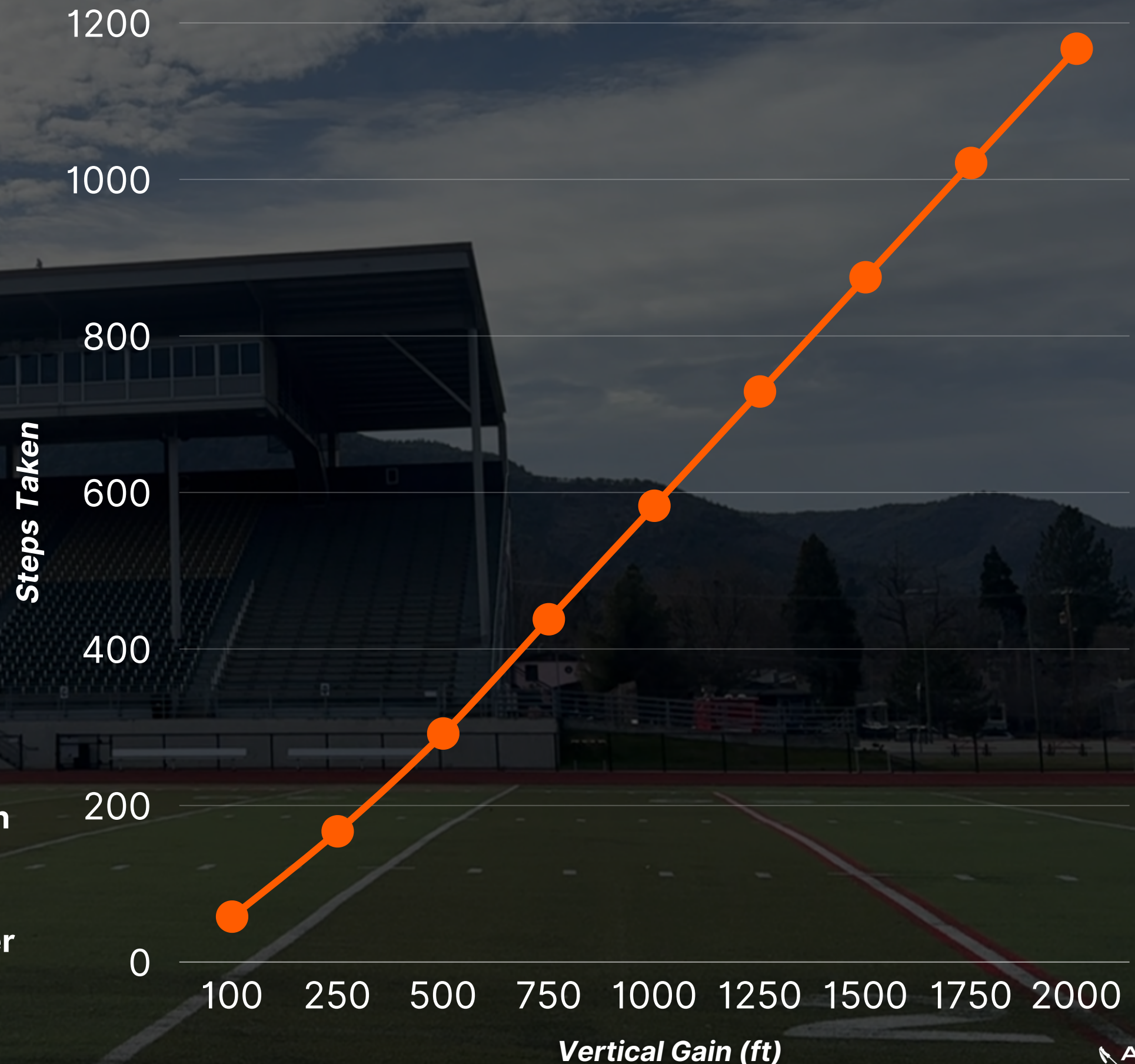
Outdoor stairs provide an unbeatable way to build real-world mountain fitness. Unlike machines, they challenge stabilizer muscles, improve agility, and strengthen both uphill and downhill movement—crucial for descents. The added variability of hopping, bounding, and lateral steps builds power and coordination, while real outdoor conditions enhance adaptability. Training on stairs mimics true trail conditions, making every step count toward your mountain goals.

Key Points

- Strengthen both uphill **AND** downhill movement patterns.
- Improve agility, balance, and power with diverse step variations.
- Adapt to real-world conditions for better trail readiness.

How Stair Climbing Impacts Vertical Gain

● Vertical Gain (Feet)



****Based on 7" Stairs****

INCLINE TREADMILL WORKOUTS



Whether you're prepping for a big mountain day or just boosting endurance, these workouts will meet you where you're at—and push you higher.

01

Adjust

Heart Rate Zones are #1! Match incline and speed to stay within your heart rate zones. If needed, slow down to keep efforts sustainable

02

Modify

Not every incline or duration will be right for you—adjust based on fitness level. Lower incline if needed and build up gradually.

03

Implement

These workouts are tools—not rules! Feel free to modify based on goals, time constraints, or experience.

04

Progress

As you adapt, challenge yourself! Increase incline, increase pace, extend intervals, or tweak intensity to keep improving.

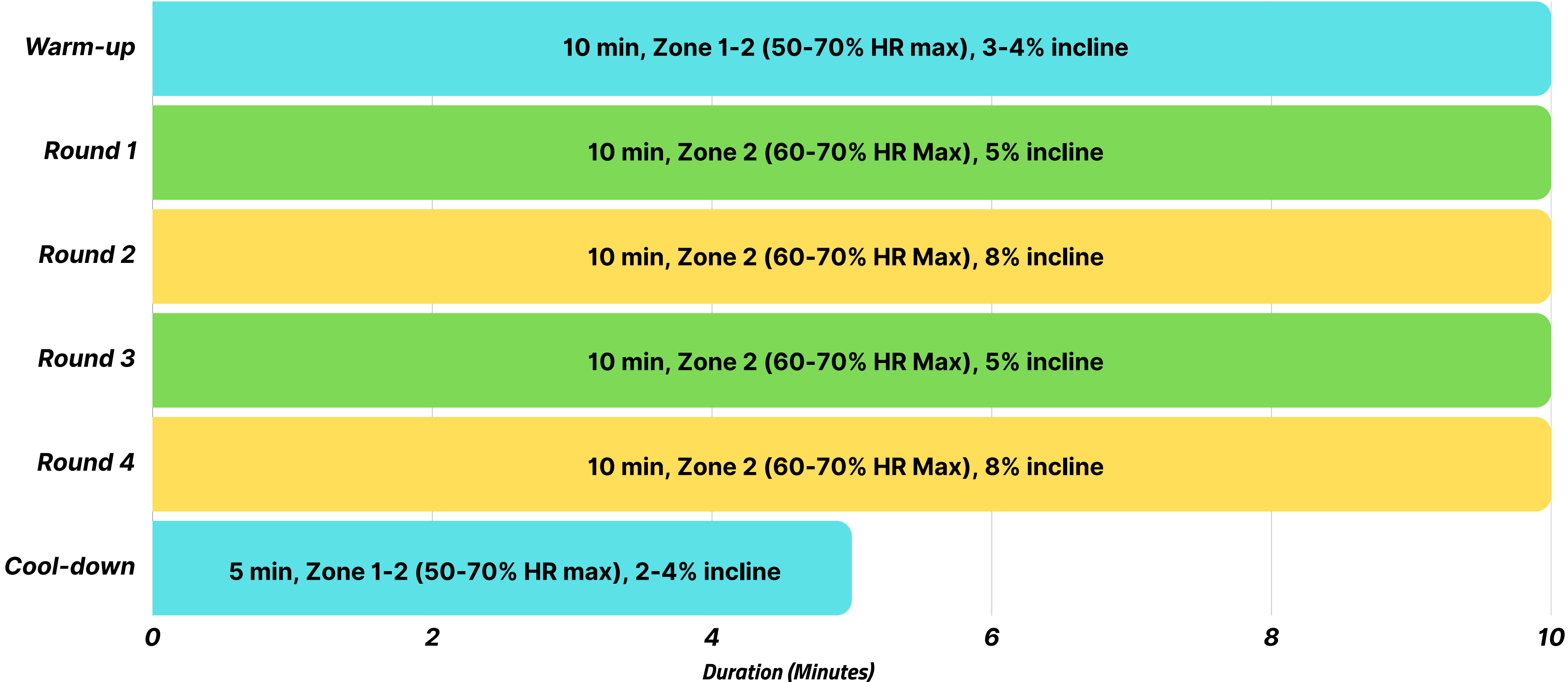
Heart Rate Training Zones		HR Max = 220-Age *OR* Heart Rate Drift Test
Zone 1	Easy effort, low intensity Ideal for active recovery & warm-ups Feels like an all-day pace Example: Casual hiking, slow jogging	50-60% of HR Max
Zone 2	Builds aerobic capacity & fat metabolism Improves cardiovascular efficiency Sustainable for long durations Example: Steady-state efforts like long hikes, ski touring, endurance runs	60-70% of HR Max
Zone 3	Moderate to hard effort, but controlled Improves lactate clearance & muscular endurance Pushing the pace but not full sprinting Example: Sustained uphill hiking, tempo running, ski touring at effort	70-80% of HR Max
Zone 4	Challenging pace—breathing is labored Improves speed, endurance, & power Used for interval training & race pace efforts Example: Fast uphill hiking, hard ski touring climbs, race-pace running	80-90% of HR Max
Zone 5	Short bursts at full intensity Trains max oxygen uptake & explosive power Can only be sustained for a few minutes or less Example: Sprints, short & steep hill climbs, anaerobic ski touring efforts	90-100% of HR Max

Base Builder: Foundational Uphill Fitness

This foundational treadmill workout is perfect for building your aerobic base, essential for sustained climbs and long days on the trails. Alternating between moderate incline levels keeps the session engaging while effectively preparing your body for prolonged uphill efforts. Maintain a steady, conversational pace throughout; increase speed gradually as your fitness improves

Details:

- **Equipment:** Incline Treadmill
- **Total Duration:** 55 minutes
- **Intensity:** Low to Moderate
- **Goals:** Build foundational aerobic endurance and muscular stamina for sustained uphill hikes and climbs.

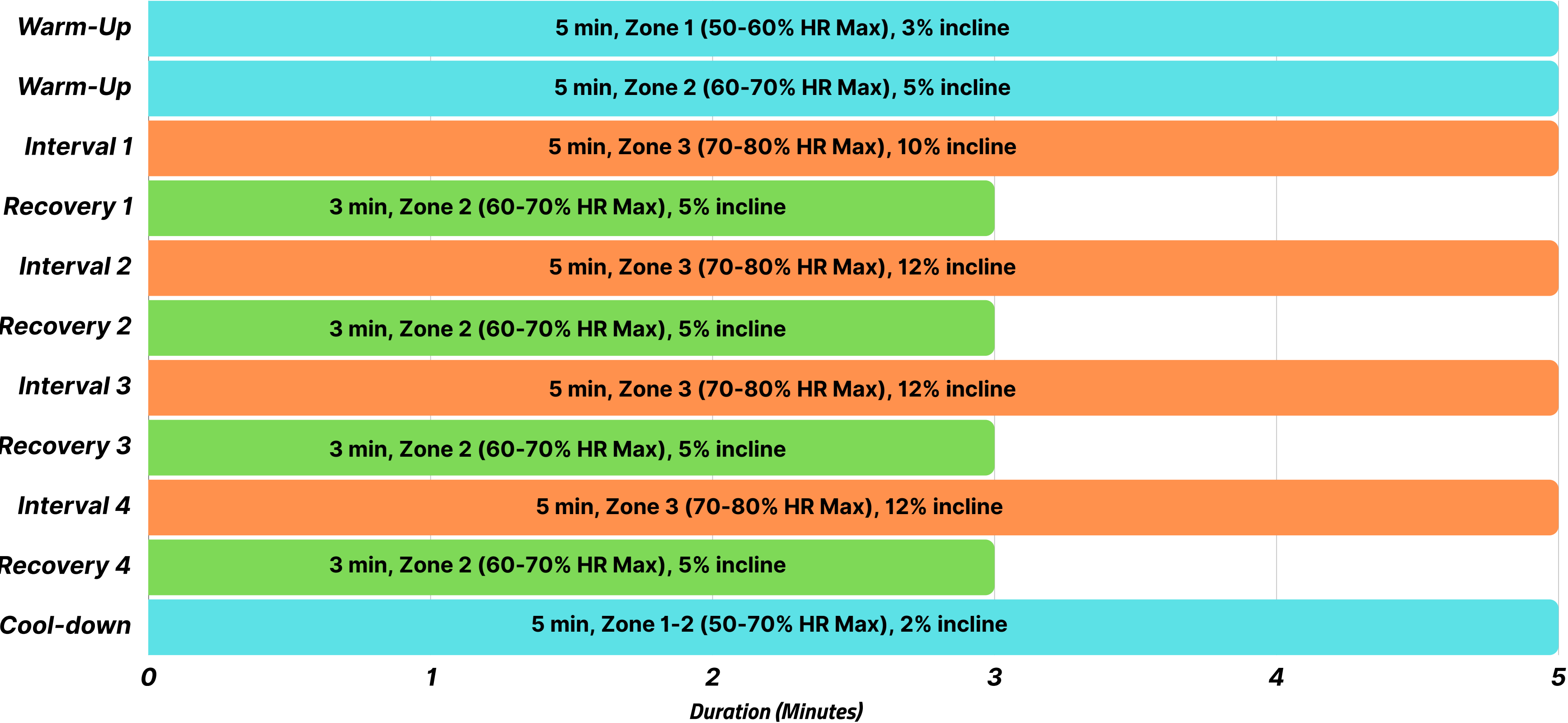


Hill Builder - Intermediate Incline Intervals

This treadmill session focuses on comfortably pushing your aerobic limits by introducing short, moderate intervals of increased incline at Zone 3 efforts, alternating with easier Zone 2 recovery periods. Ideal for hikers or backpackers looking to enhance uphill endurance. Maintain steady breathing; increase pace slightly during intervals.

Details:

- **Equipment:** Incline Treadmill
- **Duration:** 42 minutes
- **Intensity:** Moderate
- **Goal:** Improve aerobic capacity and muscular endurance for uphill efforts.

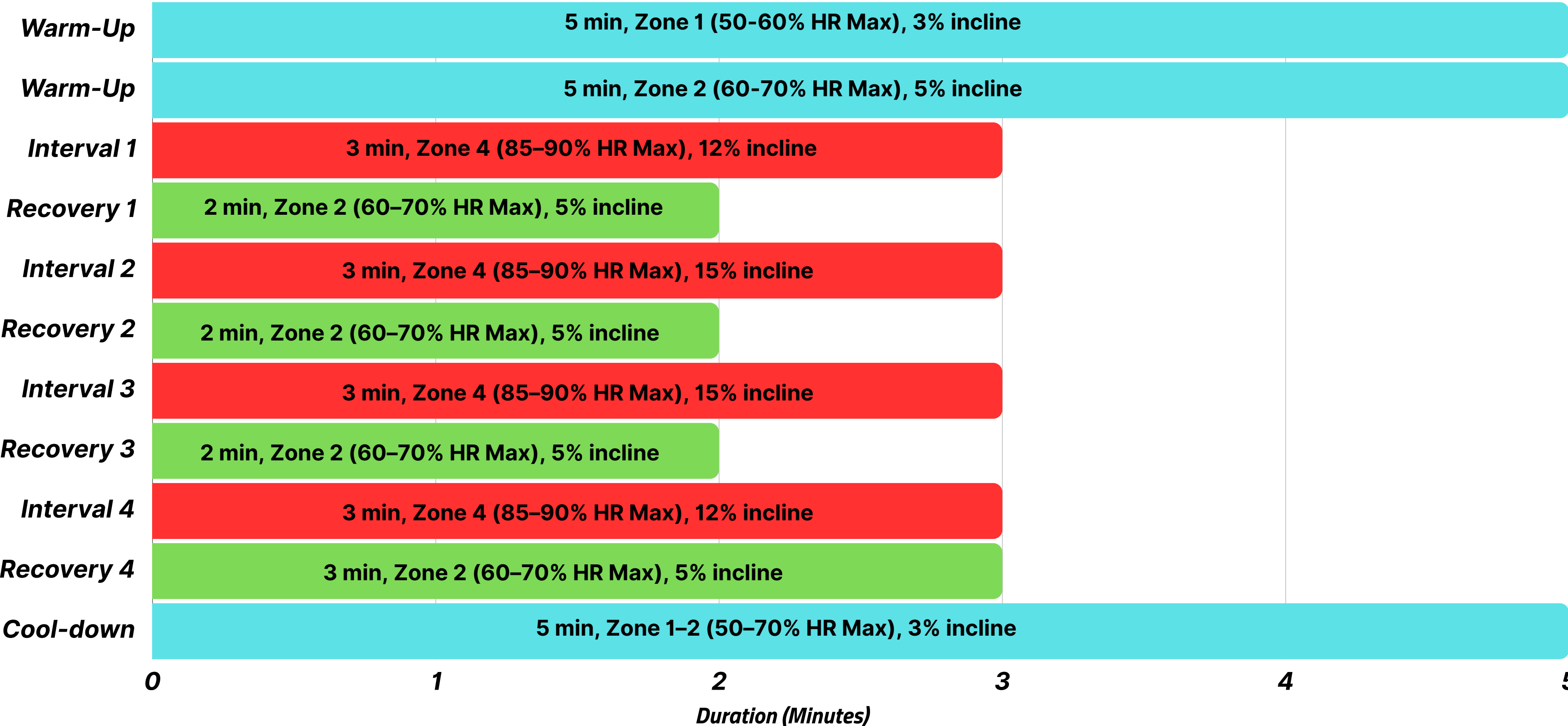


Peak Power: Advanced Uphill Intervals

Take your mountain fitness to the next level with this dynamic interval session. Alternating short, challenging Zone 4 efforts with brief Zone 2 recoveries, this workout improves muscular power, anaerobic capacity, and climbing efficiency. Perfect for hikers, trail runners, and mountaineers seeking peak performance. Intervals should feel hard but manageable—ensure full recovery during rest periods to maximize training effectiveness and minimize fatigue.

Details:

- **Equipment:** Incline Treadmill
- **Duration:** 41 minutes
- **Intensity:** Moderate to High
- **Goal:** Enhance anaerobic threshold, muscular power, and steep-climb performance.



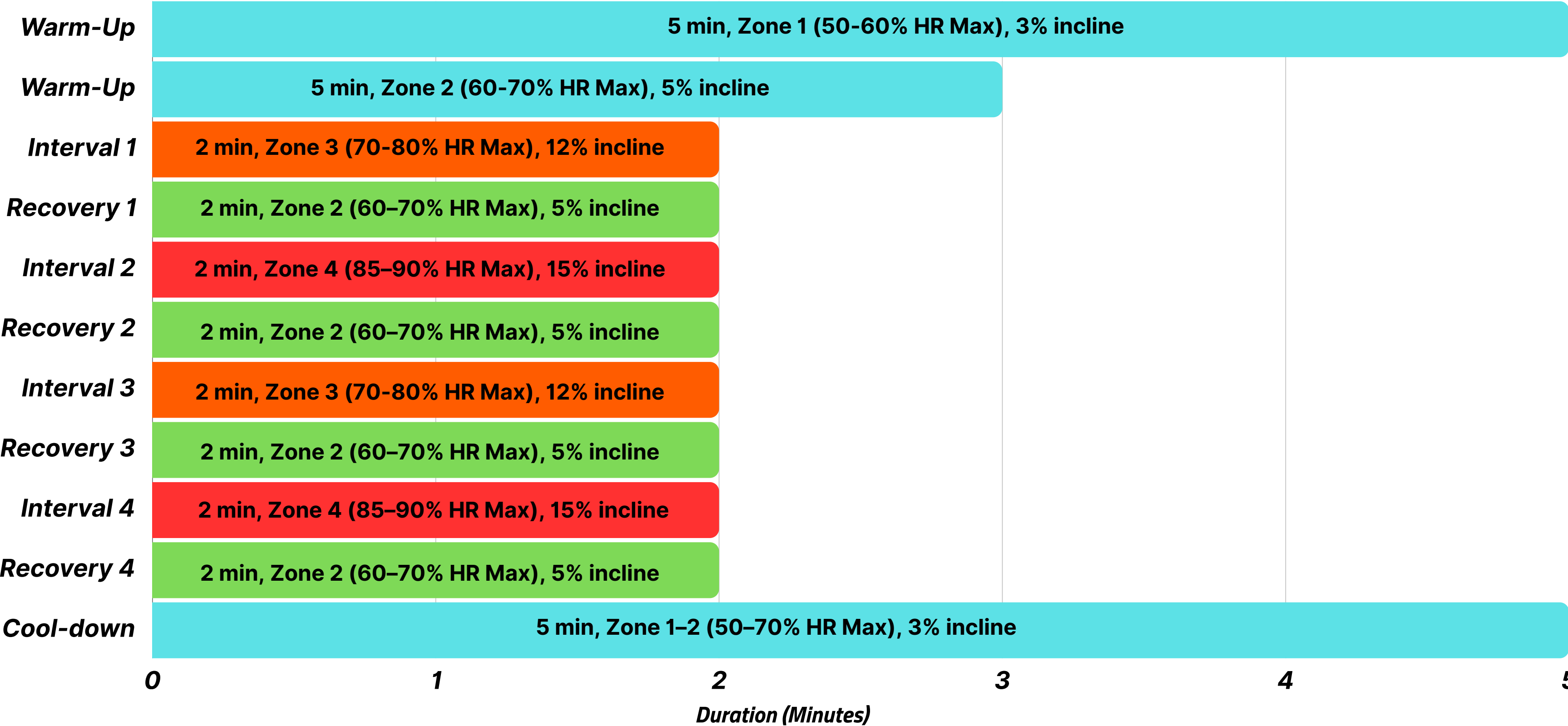
Uphill Power Intervals

Take your mountain fitness to the next level with this dynamic interval session, alternating challenging Zone 4 efforts with brief Zone 2 recoveries to build power, anaerobic capacity, and climbing efficiency. Intervals should feel hard but manageable—maximize effectiveness by fully recovering between efforts.

Need more challenge? Just add more intervals to push your endurance even further!

Details:

- **Equipment:** Incline Treadmill
- **Duration:** 30 minutes
- **Intensity:** Moderate to High
- **Goal:** Develop power, anaerobic threshold, and climbing endurance.



Summit Attack Simulator

Take your mountain fitness to the next level with this progressive climb, simulating a real ascent from approach to summit. The incline gradually increases to challenge endurance, aerobic capacity, and leg stamina.

Want more challenge? Extend your climb or add weight to your pack!

Details:

- **Equipment:** Incline Treadmill
- **Duration:** 50 minutes
- **Intensity:** Moderate
- **Goal:** Simulate long, steady uphill efforts for trekking, mountaineering, and hiking.

Approach

5 min, Zone 1 (50-60% HR Max), 3% incline

Lower Slopes

10 min, Zone 2 (60-70% HR Max), 6% incline

Mid Mountain

10 min, Zone 2-3 (65-75% HR Max), 8% incline

Upper Mountain

10 min, Zone 3 (70-80% HR Max), 10% incline

Summit Push!

8 min, Zone 3-4 (75-85% HR Max), 15% incline

Descent

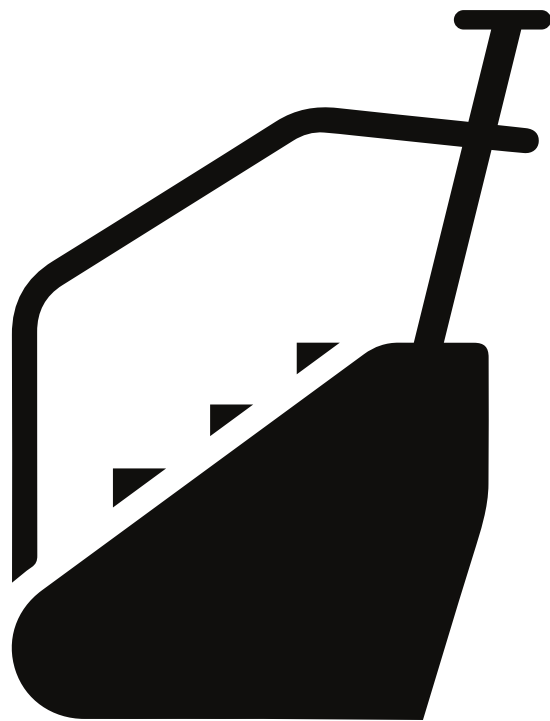
7 min, Zone 2 (60-70% HR Max), gradual incline drop 6% → 3% → 0%

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Duration (Minutes)



STAIRMASTER WORKOUTS



Powerful, efficient, and mountain-specific—
StairMaster training builds endurance, leg strength,
and climbing power. Use these workouts to simulate
the sustained vertical effort of real-world ascents.

01

Adjust

Heart Rate Zones are #1! Adjust SPM based on current level of fitness. If maintaining a higher SPM is too difficult, reduce speed or shorten intervals to build endurance safely.

02

Modify

Refine your technique. Maintain an upright posture, drive through your glutes, and avoid relying too much on the handrails. Efficient movement leads to better endurance!

03

Implement

These workouts are tools—not rules! Feel free to modify based on goals, time constraints, or experience.

04

Progress

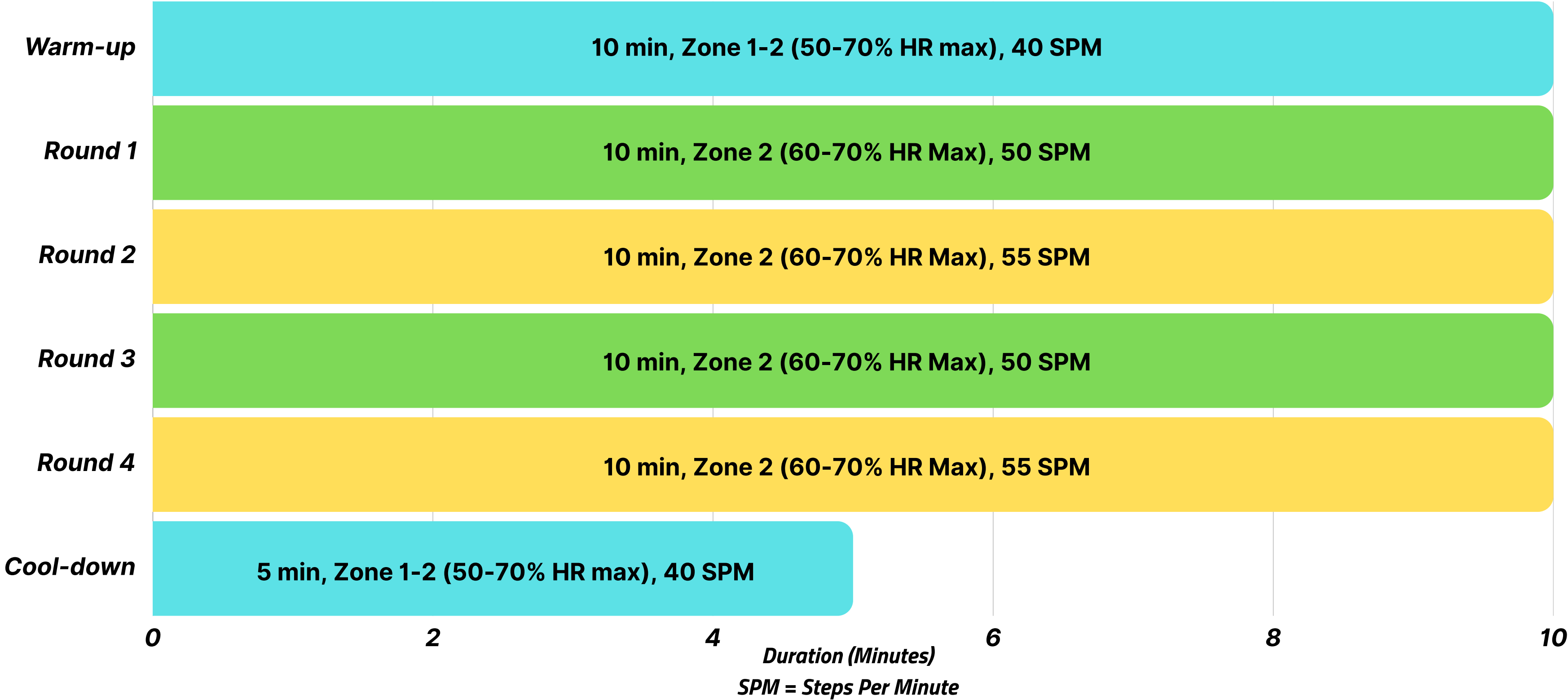
As you adapt, challenge yourself! Increase SPM, extend intervals, or tweak heart rate intensity to keep adapting and improving.

Base Builder: Stair Climbing Endurance

This structured StairMaster workout is designed to build your aerobic base and muscular endurance for sustained uphill movement. By alternating between moderate incline levels and controlled step rates, this session enhances stamina while reinforcing efficient breathing and foot placement. Ideal for hikers, trail runners, and climbers, this workout prioritizes steady-state endurance, helping you maintain a strong, sustainable pace for prolonged ascents.

Details:

- **Equipment:** StairMaster
- **Total Duration:** 55 minutes
- **Intensity:** Low to Moderate
- **Goals:** Build foundational aerobic endurance and muscular stamina for sustained uphill hikes and climbs.

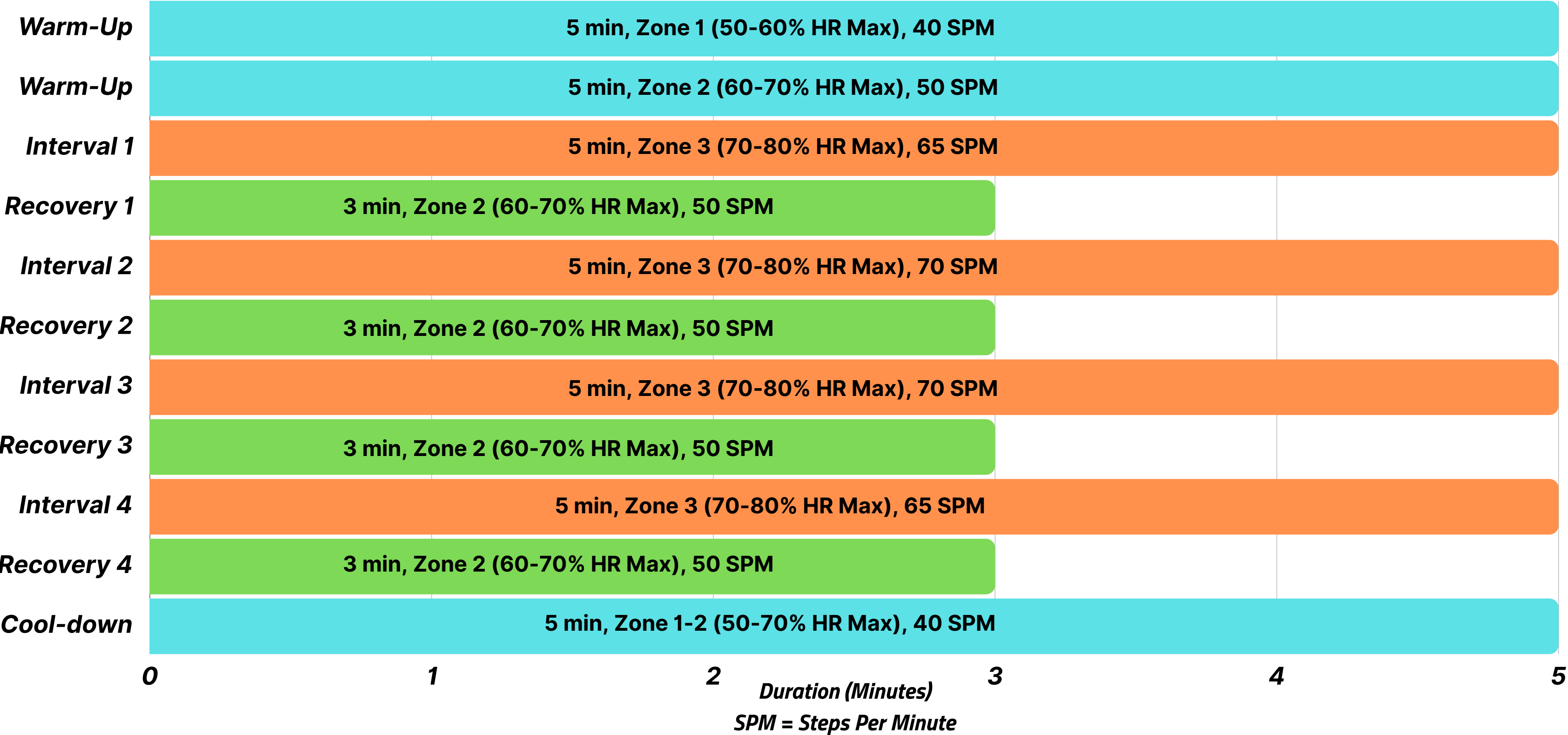


Hill Builder - Intermediate Stair Climbing Intervals

This session introduces controlled intensity intervals, alternating moderate-speed climbs (Zone 3) with recovery periods (Zone 2). Ideal for hikers, backpackers, and mountain athletes looking to increase stamina, leg endurance, and climbing efficiency without overloading fatigue. Maintain steady breathing and focus on consistent foot placement for efficiency.

Details:

- **Equipment:** StairMaster
- **Duration:** 42 minutes
- **Intensity:** Moderate
- **Goal:** Improve aerobic capacity, leg endurance, and climbing efficiency through structured intervals.

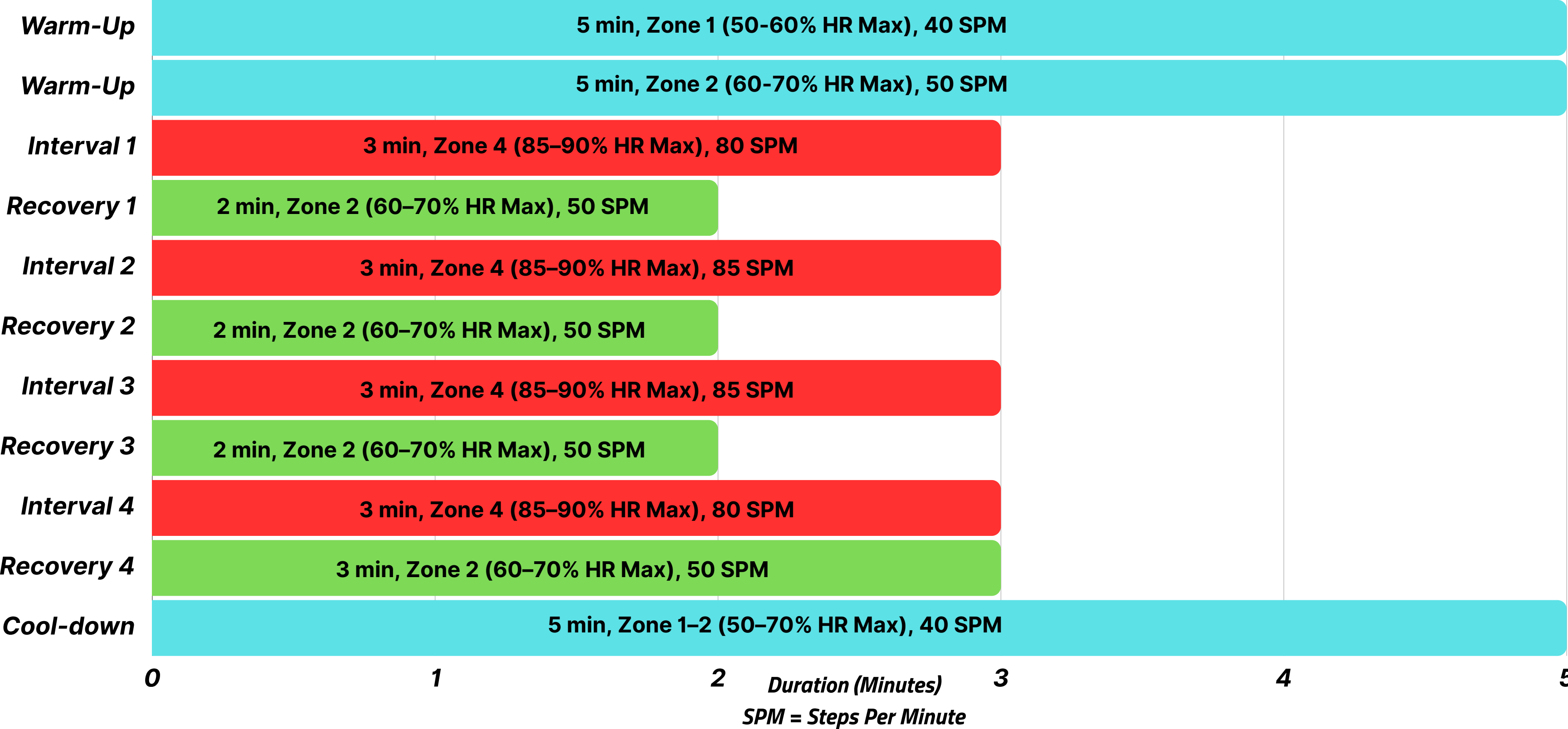


Peak Power: Stair Climbing Intervals

Take your stair climbing fitness to the next level with this high-intensity interval session. This workout alternates short, challenging Zone 4 efforts with brief Zone 2 recoveries, designed to improve muscular power, anaerobic capacity, and climbing efficiency. Perfect for hikers, trail runners, and mountaineers seeking peak uphill performance. Push yourself during intervals—but ensure full recovery during rest periods to maximize training effectiveness and minimize fatigue.

Details:

- **Equipment:** StairMaster
- **Duration:** 41 minutes
- **Intensity:** Moderate to High
- **Goal:** Enhance anaerobic threshold, muscular power, and steep-climb performance.



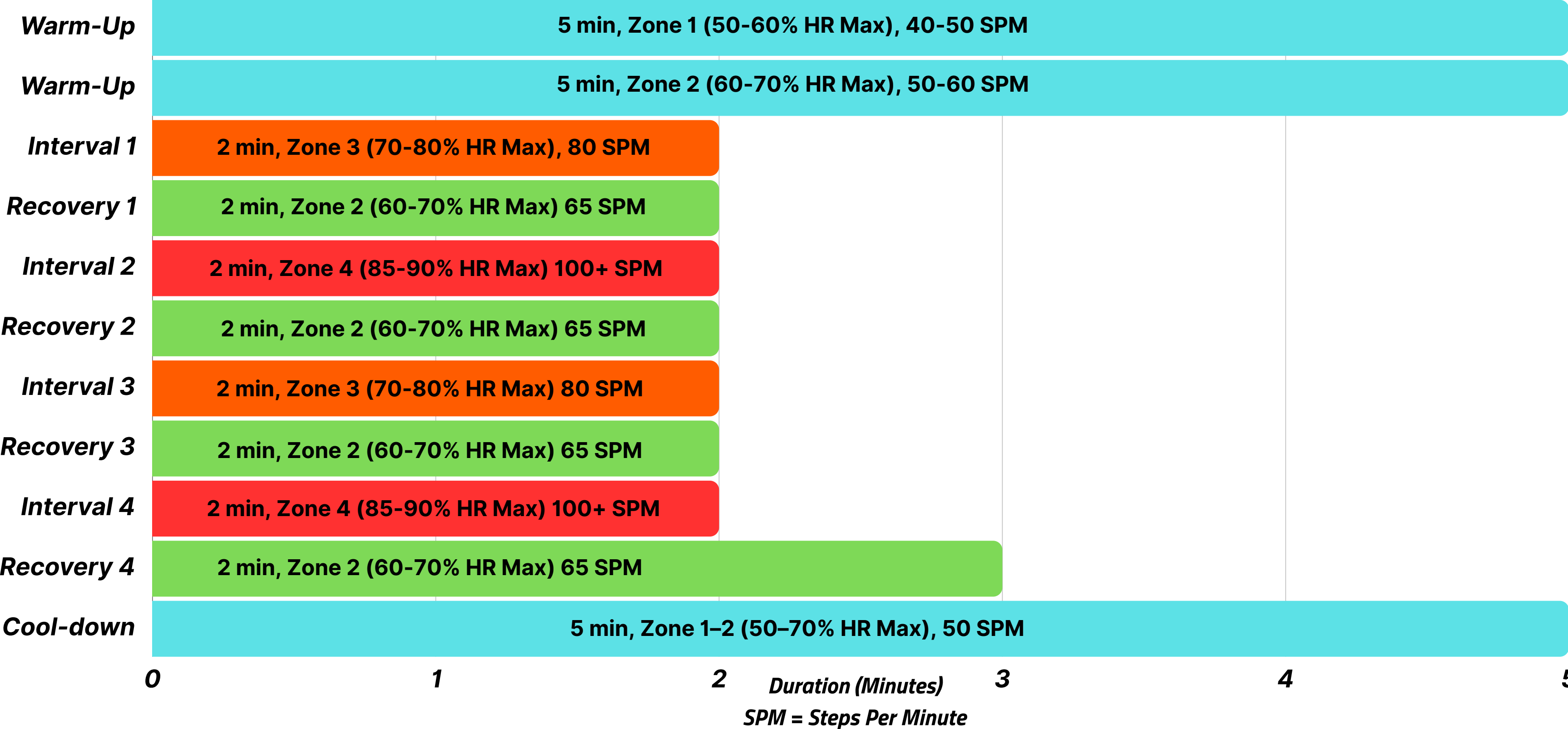
Stair Climber Power Intervals

Take your stair climbing endurance to the next level with this dynamic interval session. Alternating between challenging high-intensity efforts and controlled recovery periods, this workout builds leg power, aerobic endurance, and stair-climbing efficiency for tackling steep ascents. Intervals should feel hard but manageable—recover fully to maximize effectiveness between efforts.

Need more challenge? Add weight, increase step rate, or add extra intervals to push your endurance further!

Details:

- **Equipment:** StairMaster
- **Duration:** 30+ minutes
- **Intensity:** Moderate to High
- **Goal:** Build leg power, stair endurance, and steep ascent efficiency.



Summit Attack Stair Simulator

Take your mountain fitness to the next level with this progressive climb, simulating a real ascent from approach to summit. The step rate gradually increases to challenge endurance, aerobic capacity, and leg stamina.

Want more challenge? Extend your climb or add weight to your pack!

Details:

- **Equipment:** StairMaster
- **Duration:** 50 minutes
- **Intensity:** Moderate
- **Goal:** Simulate long, steady uphill efforts for trekking, mountaineering, and hiking.

Approach

5 min, Zone 1 (50-60% HR Max), 40-50 SPM

Lower Slopes

10 min, Zone 2 (60-70% HR Max), 50-60 SPM

Mid Mountain

10 min, Zone 2-3 (65-75% HR Max), 60-70 SPM

Upper Mountain

10 min, Zone 3 (70-80% HR Max), 70-80 SPM

Summit Push!

8 min, Zone 3-4 (75-85% HR Max), 80-90 SPM

Descent

7 min, Zone 2 (60-70% HR Max), gradual drop 70→65→50 SPM



Duration (Minutes)



STAIR WORKOUTS



Experiment with different combinations!
Use this guide to create a stair workout
tailored to your goals—whether for
endurance, strength, or power.

Stair training is one of the most effective, functional, and adaptable ways to build strength, endurance, and agility for outdoor pursuits. Unlike machines, stairs introduce natural variability in step height, spacing, and surface conditions, making them a true-to-life training tool for hikers, trail runners, mountaineers, and backcountry skiers. The ability to control intensity—whether through speed, step type, or incline variation—allows for highly customizable workouts that mimic real-world movement demands.

How to Build Your Own Stair Workout

Because stair height, length, and accessibility vary, workouts should be built around movement patterns rather than rigid set/rep schemes. Follow these steps to create a structured, effective session:

- **Choose Your Focus:** Endurance? Strength? Power? Recovery?
- **Pick Your Movements**
 - **Beginners:** Start with 3-4 movements, 20-30 minutes total. Start small!
 - **Intermediate:** 4-6 movements, 30-45 minutes total; increase intensity.
 - **Advanced:** Incorporate plyometrics and extend duration to 45+ minutes.
- **Duration:** 20-60 minutes based on fitness level.
- **Intensity:** Adjust speed, number of steps per rep, or increase pack weight for more resistance.
- **Progression:** Start with controlled, repeatable efforts. Increase difficulty by adding explosive elements (hops, bounds), extending interval length, or incorporating weight.

LINEAR - BUILD SUSTAINED UPHILL ENDURANCE

- Single Stair March
- Double Stair March
- Jumbo Stair Step (3 or more)
- Stair Sprint

LATERAL - STRENGTHEN STABILIZERS & AGILITY

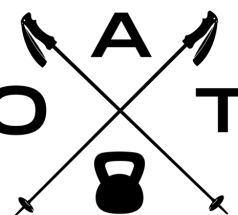
- Lateral Step Up
- Double Lateral Step Up
- French Step (Crossover)

PLYOMETRICS – EXPLOSIVE POWER FOR CLIMBS

- Two-Leg Hop
- Single-Leg Hops
- Lateral Hops
- Diagonal Hops

DESCENT – CONTROL & INJURY PREVENTION

- Single Stair
- Double Stair
- Lateral Step Down
- Zig-Zag Descent
- Controlled Hop



Mountain-Ready Stair Workout

This stair-based endurance and power workout is designed to build leg strength, aerobic capacity, and climbing efficiency for outdoor athletes. Adjust the number of flights, reps, or speed based on stair availability—If training on a short staircase (5-10 steps), focus on speed and repeats. For longer staircases (30+ steps), emphasize sustained climbs and controlled descents. If stairs are limited, repeat the set multiple times or substitute plyometric movements on flat ground for explosive strength.

Details:

- **Equipment:** 10-50 real stairs
- **Duration:** 30-45 minutes
- **Elevation Gain/Loss:** 500-1,000'+
- **Intensity:** Moderate to High
- **Goal:** Develop explosive power, sustained endurance, and stability for real-world ascents and descents.

Phase	Exercise	Reps / Flights	Notes
Warm-Up	Single Stair Walk	3 Flights	Easy pace, focus on form
Warm-Up	Double Stair March	3 Flights	Gradual intensity build
Interval 1	Stair Sprints	4 Flights	Sprint up, walk down slowly
Plyometrics	Two-Leg Hops	2 Flights	Consistent & controlled
Interval 2	Lateral Step Up	4 Flights (Alternating)	Explosive, land soft
Plyometrics	Single Leg Hops	2 Flights (Alternating)	Balance & control
Interval 3	French Step Up	4 Flights (Alternating)	Lateral Crossover
Interval 4	Jumbo Step-Ups	3 Flights	Max range, controlled explosive push
Cool-Down	Walk Up & Down Stairs	2 Flights	Easy pace, recovery
Cool-Down	Quad & Calf Stretch	5-10 minutes	Loosen up & relax

A 'flight' refers to one full set of stairs from bottom to top. If your staircase has 10 steps, one flight = 10 steps up and 10 steps down.