

Eden's Primespan Framework Protocol Templates

Heart (Cardiovascular Health)



Figure: Aerobic exercise, such as cycling, is vital for improving heart health and cardiorespiratory fitness. Regular cardiovascular training builds a stronger heart muscle and enhances endurance capacity.

Primary Goal(s)

- **Improve Cardiovascular Fitness:** Increase aerobic capacity ($VO_{2\max}$) and cardiac output, which are strong predictors of longevity ¹. This means a more efficient heart that can pump blood with less effort and sustain activity longer.
- **Enhance Heart Health & Resilience:** Lower resting heart rate and blood pressure, strengthen the left ventricle, and improve blood flow to reduce risk of heart disease and stroke ² ³. The aim is to improve endurance (e.g. being able to climb stairs or hike without undue fatigue) and build a "reserve" of cardiovascular function for later decades.
- **Reduce Cardiometabolic Risk Factors:** Promote healthy cholesterol levels, improve circulation (endothelial function), and decrease chronic inflammation associated with cardiovascular aging ⁴ ⁵. The ultimate goal is fewer risk factors for heart attacks and vascular disease.

Key Metrics

- **Resting Heart Rate (RHR):** A lower RHR (e.g. ~60 bpm or below) indicates improved fitness and heart efficiency ². Track RHR in the morning; a downward trend suggests progress.
- **$VO_{2\max}$:** This is the maximum oxygen your body can utilize during exercise, a gold-standard marker of aerobic fitness. A higher $VO_{2\max}$ is strongly linked to greater lifespan ⁶. Eden can measure this via guided fitness tests or estimate from workouts.

- **Blood Pressure:** Aim for a healthy blood pressure (around or below 120/80 mmHg). Regular aerobic exercise is proven to reduce blood pressure in both hypertensive and normal individuals ⁷, which eases strain on the heart and arteries.
- **Heart Rate Recovery:** How quickly your heart rate drops after exercise (e.g. 1-minute post-exercise heart rate). Faster recovery is a sign of good cardiovascular fitness and parasympathetic tone.
- **Exercise Performance Metrics:** Track improvements in endurance (e.g. time or distance you can jog, swim, or cycle at a moderate pace) and any personal markers like a 2-mile walk time. Increasing distance or speed at a given effort is a tangible sign of progress.

Protocols

- **Aerobic Exercise (Zone 2 Training):** Engage in moderate-intensity cardio training at least 3 times per week, totaling *at minimum* ~150 minutes of aerobic exercise (e.g. brisk walking, cycling, swimming). A conservative starting point is 30-minute sessions, but the stretch goal is about 3 hours per week of Zone 2 cardio ⁸. Zone 2 (roughly an effort where you can talk in sentences) drives powerful adaptations – it increases mitochondrial efficiency, lowers resting heart rate, and improves fat metabolism ^{1 2}. Over time, work up to 45–60 minute sessions and mix in different modalities (hiking, rowing, etc.) to keep it engaging. This consistent aerobic base will raise VO₂ max and build a “heart reserve” that’s linked to better lifespan ⁶.
- **High-Intensity Intervals (Zone 5 Training):** Incorporate 1 high-intensity cardio session per week (once a solid aerobic base is established). For example, perform 4×4 minute intervals at a hard pace (where speaking a full sentence is difficult) with equal rest periods. High-intensity interval training further boosts VO₂ max and cardiac output ⁹. Even short interval sessions confer outsized benefits for maintaining peak cardiovascular capacity as you age. *Conservative minimum:* short bursts like a few 20–30 second hill sprints or fast cycling spurts to get the heart rate up. *Stretch goal:* a structured interval workout (e.g. 5 × 3 minutes at >90% max effort) once weekly. Always include a gentle warm-up and cool-down to avoid injury.
- **Active Lifestyle & Daily Movement:** Beyond formal workouts, stay active throughout the day. Aim for at least 7,000–10,000 steps daily or equivalent activity. Avoid long periods of sitting; break up sedentary time with short walks or standing. Even light activity accumulated over the day improves blood flow and helps lower blood pressure and blood sugar. For example, take the stairs when possible, do a 5-minute walk-and-stretch break each hour, or consider a standing desk. These habits keep your heart working at a healthy baseline and compound over time.
- **Heart-Healthy Diet:** Support your cardiovascular system through nutrition. Emphasize a Mediterranean-style diet rich in fruits, vegetables, legumes, fish, and nuts, with limited refined carbs and processed foods ¹⁰. This pattern provides antioxidants and healthy fats (omega-3s) that can improve blood lipids and reduce inflammation. Ensure adequate potassium (found in foods like leafy greens and bananas) and magnesium to help maintain healthy blood pressure. Limit excess salt, sugar, and trans fats which can elevate blood pressure and harm blood vessels. Hydrate well throughout the day, since even mild dehydration can strain the heart.
- **Target Weight & Waist Management:** If overweight, a gradual reduction in body fat will lighten the load on your heart. Each 5–10% loss of body weight can lead to meaningful drops in blood pressure and improvements in blood sugar control. Eden’s metabolism protocol will address specifics, but in general, aligning your calorie intake with activity to achieve a healthy waist circumference (≤102 cm for men, ≤88 cm for women as a guideline) will directly benefit heart health. Aim for slow, steady fat loss (~0.5 kg per week) if needed, combined with muscle-preserving exercise.
- **Stress Reduction:** Chronic stress elevates cortisol and blood pressure, taxing the heart over time. Implement daily stress-management techniques (overlap with Mind/Recovery domains): e.g. 5–10

minutes of deep breathing, short mindfulness meditation, or an evening nature walk. Even these brief practices can lower resting heart rate and improve heart rate variability (a marker of autonomic nervous system balance). Consider biofeedback or apps that encourage slow, rhythmic breathing to tap into your parasympathetic “rest and digest” response. A calmer nervous system means less wear-and-tear on your cardiovascular system.

- **Supplement Strategies:** Certain evidence-backed supplements can support heart health. For example, **omega-3 fish oil** (EPA/DHA) in moderate doses (e.g. 1–2 grams/day) has been shown to lower triglycerides and may reduce cardiovascular risk by improving blood lipid profiles ¹¹. If your diet is low in fatty fish, a daily fish oil is a conservative addition. **CoQ10** is another supplement often recommended for heart health, especially for individuals over 50 or those on statins, as it supports mitochondrial function in heart muscle (dosage ~100 mg). **Magnesium** glycinate or citrate (200–400 mg in the evening) can aid blood pressure control and improve sleep quality, indirectly benefiting the heart. Always confirm with a healthcare provider, but these supplements have good safety profiles. *(No pharmaceuticals or drastic interventions are included in this plan by design.)*
- **Lifestyle Risk Factor Control:** Lastly, address the big-picture habits that profoundly affect heart health. **No smoking or tobacco use** – Eden will provide resources for cessation if needed, as smoking cessation is one of the most impactful steps for cardiovascular risk reduction. Keep alcohol moderate (no more than ~1 drink per day, with several alcohol-free days per week) since excess alcohol raises blood pressure and weakens heart muscle. Ensure regular **preventive health checks:** periodic screening of blood pressure, fasting glucose, and cholesterol can flag issues early and help track the impact of your lifestyle changes. We want to create an overall heart-friendly lifestyle that makes use of exercise, diet, and stress management in tandem – much like a top longevity physician would advise a client.

Customization Questions

- **Current Cardio Activity:** What is your current cardiovascular fitness level and routine? (e.g. do you engage in regular walking, jogging, cycling now, or are you mostly sedentary?) Eden will tailor the starting intensity (gentle walking vs. moderate jogging) based on your baseline.
- **Exercise Preferences:** What forms of aerobic exercise do you *enjoy or have access to*? (Examples: walking in nature, running, cycling, swimming, rowing, group cardio classes, dancing.) Enjoyment and logistics are key – if you hate running but love biking, we'll bias toward the bike. If you have access to a pool or a bike, that expands our options.
- **Schedule & Time Constraints:** How many days per week and minutes per day can you realistically dedicate to cardio exercise? We can design an optimal plan (e.g. 4×45 min sessions), but it must fit your life. Let us know if short daily sessions or a few longer sessions on certain days work better for you.
- **Medical or Orthopedic Issues:** Do you have any cardiovascular or metabolic conditions (e.g. hypertension, history of heart rhythm issues) or orthopedic limitations (bad knees, etc.)? These will guide exercise selection – for instance, low-impact options like cycling or swimming if joint pain is an issue, or extra medical clearance if needed for high-intensity work. Safety is paramount.
- **Monitoring & Tech:** Are you open to using any fitness tracker or heart rate monitor? (Not required, but devices like a heart rate chest strap or smartwatch can help Eden monitor your training zones and progress, and adjust the protocol accurately). If not, we'll use RPE (rate of perceived exertion) and other cues.
- **Lifestyle Factors:** Do you smoke or use any tobacco, and how much alcohol do you consume weekly? This helps us plan supportive strategies for risk factor modification. Also, describe your typical diet briefly (as it affects heart health – we will cross-use info from the Metabolism domain).

- **Personal Goals:** Do you have specific heart-related goals or milestones? For example, “run a 5K without stopping,” “lower my blood pressure to X,” “improve stamina for skiing,” or simply “keep up with my kids/grandkids on hikes.” Clear goals help Eden personalize targets and keep you motivated in the Heart domain.
-

Frame (Musculoskeletal Strength & Structural Fitness)

Primary Focus: The “Frame” domain targets your body’s structural health – muscle strength, muscle mass, bone density, and joint integrity. A strong musculoskeletal system is the foundation for longevity and functional independence (think of being able to lift your suitcase, get out of a chair easily, or catch yourself from a fall at age 80).

Primary Goal(s)

- **Build & Preserve Muscle Mass:** Increase lean muscle tissue and prevent age-related muscle loss (sarcopenia). Muscle mass is not just for looks – it’s a potent marker of healthspan. In fact, greater muscle mass and strength are strongly associated with lower mortality ¹². The goal is to develop enough muscle to support metabolism, protect joints, and maintain physical capacity as you age.
- **Increase Strength & Power:** Improve functional strength – the ability to produce force and power for daily tasks and recreational activities. This includes core strength for stability and limb strength for lifting, carrying, and balance. Muscular strength has been shown to be an even better predictor of longevity than BMI ¹³, underscoring the goal of making you *stronger*, not just “in shape.” We also want to enhance muscle *power* (fast, explosive strength) which helps in reaction and preventing falls.
- **Enhance Bone Density & Joint Health:** Through weight-bearing exercise and proper nutrition, increase bone mineral density or at least attenuate bone loss. Strong bones reduce fracture risk. Simultaneously, improve joint stability and mobility so that your “frame” (posture, balance, connective tissues) stays resilient and pain-free. The end-goal is a body that moves well (good mobility/flexibility) and can withstand the physical stresses of aging without injury.
- **Functional Mobility & Posture:** Optimize functional movements (squatting, bending, reaching, pushing, pulling) and maintain good posture. Eden aims to have you moving with ease – e.g., being able to get off the floor or carry groceries up stairs in later life (“centenarian olympics” capabilities). This includes balance and coordination, which are essential to preventing falls and preserving independence.

Key Metrics

- **Muscle Mass Indicators:** Track lean body mass via periodic body composition analysis (DEXA scan or bioimpedance) or simpler proxies like mid-arm circumference or appendicular muscle mass. An upward trend or maintenance of muscle mass is the goal (especially if you are losing weight, we want *fat* loss, not muscle loss). *Metric:* e.g. increase in skeletal muscle index (kg/m²) over time.
- **Strength Performance:** Use strength benchmarks as metrics. Examples: Grip strength (a dynamometer test) – higher grip strength correlates with lower all-cause mortality ¹². Additionally, track improvements in key lifts or functional movements: e.g., how many push-ups or pull-ups you can do, the weight you can squat, deadlift or press relative to body weight, or a simple test like a 30-second chair stand count. We will tailor tests to your level (for a novice, maybe 5-rep squat weight;

for an experienced person, 1-rep max estimates). **Goal:** Steady improvement or maintenance in these metrics, as even small strength gains have big longevity payoffs ¹³ .

- **Bone Density:** If available, periodic DEXA scans or ultrasound heel scans for bone density (especially if you're mid-life or older). Metrics: T-score or Z-score of lumbar spine and hip bone density. While changes are slow, the goal is to maintain or improve T-scores over time. In absence of scans, use *indirect markers*: track any changes in height (loss of height can indicate vertebral compression) or history of fractures. Stronger muscles also tug on bones to stimulate density, so progress in strength is a proxy for bone health too.
- **Mobility & Balance Tests:** Simple functional metrics such as single-leg balance time (eyes closed and open), gait speed (time to walk 10 meters briskly), or a sit-and-reach flexibility test. Another great metric of mobility is the **Timed Up and Go (TUG)** – how many seconds it takes to rise from a chair, walk 10 feet, and return to sit. Improvements in these indicate better neuromuscular function. For posture, a metric might be a wall-to-occiput distance (to check for any forward head posture changes) if relevant. We can also note if chronic aches/pains (back, knee) improve, as that's a qualitative metric of frame health.
- **Power & Agility:** For those interested or at higher fitness levels, metrics like vertical jump height or stair climb power (time to run up a flight of stairs) can gauge explosive power. For older clients, even a fast-twitch measure like how quickly you can rise from a chair without using arms is useful. These metrics help ensure not just raw strength, but the quick reaction ability of muscles, which is crucial for preventing falls.

Protocols

- **Progressive Resistance Training:** The cornerstone is a structured **strength training program** performed at least 2–3 days per week ¹⁴ . Each session (~45 minutes) should cover major muscle groups: legs (squats, lunges or leg press), push movements (push-ups, bench press or overhead press), pull movements (rows, pull-ups or lat pulldown), and core/back (planks, deadlifts, or back extensions). Start with a conservative load if you're new – even bodyweight exercises or resistance bands – then progressively increase resistance (weight or band tension) as you get stronger. *Conservative minimum:* two full-body sessions weekly, hitting each major muscle group with 2–4 sets in a moderate rep range (8–15 reps). *Stretch goal:* three to four sessions, potentially split into specific focus (e.g. upper/lower body split or push/pull/legs) for advanced trainees. Emphasis is on **progressive overload** – gradually challenge your muscles with a bit more weight or reps over time to stimulate growth and strength gains. Proper form and technique are paramount (to avoid injury), so Eden will provide cues/videos. Expect measurable strength increases within weeks, and over months, significant improvements in muscle tone and functional strength.
- **Strength with Stability:** Incorporate **stability and functional movements** into your routine. This means including exercises that challenge your balance and core control – for example, single-leg exercises (like one-legged Romanian deadlifts or split squats), balance board or bosu exercises, and core work (planks, anti-rotation exercises). A stable core and good balance are the foundation for safe strength gains. Peter Attia often emphasizes stability as the base of the “exercise pyramid” for longevity ¹⁵ ¹⁶ . We'll weave stability drills in as warm-ups or accessory work (e.g. standing on one foot while doing light biceps curls, or farmer's carries to strengthen your core and grip). The goal is a robust frame that's strong *and* coordinated, reducing injury risk.
- **Bone-Loading Activities:** To stimulate bone density, we include **weight-bearing and impact exercises** appropriate for your level. Examples: brisk walking or hiking (gravity loading), jogging or running if your joints tolerate it, jumping exercises (jump rope, box jumps, or even hopping in place) if you're conditioned – these have been shown to slow bone loss and even improve bone density ¹⁷ .

For those who cannot do impact, resistance training itself provides bone stimulus (especially exercises like squats and deadlifts that load the spine and hips). *Conservative minimum:* regular brisk walking and at least light jumping or stamping drills a few times a week to provide bone stimulus. *Stretch goal:* plyometric training (e.g. jump squats or power skips) once a week in a safe manner. We will also ensure vitamin D and calcium needs are met (see Supplements) to support bone health.

- **Mobility and Flexibility Routine:** Dedicate time (5–10 minutes) daily or at least after workouts for **mobility drills and stretching**. This might include dynamic stretches (leg swings, arm circles) and static stretches for key tight areas (e.g. chest/shoulders, hip flexors, hamstrings, calves). Include exercises for joint mobility such as ankle circles, hip openers, and thoracic spine rotations. A yoga session once a week or a short morning mobility flow can work wonders for joint health and posture. The aim is to maintain or improve your range of motion, which will help you perform exercises with proper form and keep you moving fluidly as you age. We'll track improvements (e.g., you might go from barely touching your shins to touching toes, or improve overhead shoulder flexibility). Good mobility also means less chronic pain and better exercise technique.
- **Functional Training & Balance:** Beyond pure strength, we incorporate **functional movements** that mimic real-life activities. For example: farmer's carries (carrying weights in each hand like grocery bags), step-ups or stair climbing with weight (simulating carrying things upstairs), and get-up exercises (practicing lying-to-standing motions safely). We also add balance exercises (e.g. heel-to-toe walk, single-leg stands while doing light arm movements). These not only build strength but teach your body to use it in coordinated ways, improving neuromuscular connections. As a stretch goal, if you're willing, we could include agility drills like ladder drills or sport-like activities (tennis, dancing) to keep coordination sharp. **Bottom line:** we train for the real world – so you can lift, carry, and move confidently, not just push numbers on a machine.
- **Nutrition for Muscle & Bone:** The Frame domain's exercise will be ineffective without proper **nutrition** to recover and build. Emphasize *adequate protein intake*: generally ~1.2–1.6 grams of protein per kilogram body weight per day (Eden will personalize this). High-quality protein (lean meats, fish, eggs, dairy, or plant proteins with a complete amino acid profile) provides the building blocks for muscle repair ¹⁸. For example, if you weigh 70 kg, target ~90g–110g protein daily, spread across meals. Ensure sufficient **calcium and Vitamin D** for bones – include dairy or fortified plant milk, leafy greens, and consider a vitamin D supplement if levels are low (target 800–2000 IU/day with doctor guidance) along with vitamin K2 to synergize bone deposition. **Omega-3 fats** from fish oil not only support heart health but can reduce muscle soreness and inflammation post-exercise. Eden will coordinate diet recommendations with the Metabolism domain, but our goal here is to create an anabolic (muscle-building) environment: plenty of protein, enough total calories (or slight surplus if muscle gain is desired), and micronutrients like magnesium and zinc which play roles in muscle function. *If fat loss is a goal*, we'll aim for a high-protein modest deficit so that you lose fat while preserving or even gaining muscle.
- **Supplement Strategies:** Evidence-backed supplements to support the musculoskeletal system can be considered:
- **Creatine Monohydrate:** Perhaps the most researched supplement for strength. A daily dose of ~5 grams can help increase muscle fiber size, strength, and power when combined with training – especially important as we age ¹⁹. Creatine also may improve bone mineral density and has cognitive benefits. It's safe for most people (just stay well-hydrated), but Eden will check any contraindications (e.g. kidney issues).
- **Collagen + Vitamin C:** If joint health or tendon strength is a concern, a collagen supplement (10 g) with vitamin C an hour before training might support connective tissue. The evidence is emerging, but some studies suggest it can aid tendon and cartilage integrity during loading.

- **Protein Powder:** Not *necessary* if you hit protein through diet, but a high-quality whey or plant protein can be a convenient way to ensure you meet targets, especially post-workout to aid recovery. Leucine-rich protein (whey) is great for older adults to trigger muscle synthesis.
- **Calcium/Vitamin D:** As mentioned, if dietary intake is low, supplementing these is crucial for bone maintenance. Typically 500–1000 mg calcium (depending on diet) and 1000–2000 IU vitamin D3 daily – adjusted per blood test results.
- **Magnesium:** Supports muscle relaxation and recovery. 300–400 mg at night can help with muscle cramps and improve sleep quality (tying into Recovery domain).
- We avoid any unsafe or unproven “muscle-building” supplements. Simplicity and consistency trump magic pills. The focus is on proven basics: creatine, protein, and micronutrients.
- **Rest & Recovery for Muscles:** Your frame rebuilds itself during rest. Prioritize **sleep** (see Recovery domain) and schedule at least 1–2 rest days from intense training per week. Muscle groups need roughly 48 hours to fully recover from heavy sessions. You can do light activity or mobility on “off” days, but avoid maximal strength training on back-to-back days targeting the same muscles. Pay attention to soreness – mild soreness is okay, debilitating soreness is counterproductive. Eden will help periodize your training: *Conservative approach:* start with low volume and gradually increase sets/ reps to prevent injury. *Stretch goal:* eventually progress to more advanced periodization (e.g. alternating heavy and light weeks, or doing “deload” weeks every 4–6 weeks where volume is cut in half to let tissues super-compensate). This ensures continuous improvement without burnout. We may also integrate techniques like massage, foam rolling, or gentle yoga on recovery days to improve blood flow to muscles and speed healing.

Customization Questions

- **Training History:** What is your experience with strength training or sports? (e.g. “I’ve never lifted weights” vs “I did crossfit for 3 years” vs “I played college athletics”). This helps Eden determine your starting level and how much instruction on technique you’ll need. No worries if you’re a true beginner – we will start with foundational movements.
- **Injuries or Limitations:** Do you have any past injuries, chronic joint pain, or orthopedic concerns? (Examples: lower back pain, knee issues, rotator cuff injury, arthritis, etc.) We will customize exercise selection around these – e.g. substituting a hex bar deadlift for a person with low back pain, avoiding high-impact jumps if you have knee osteoarthritis, focusing on flexibility around problematic joints, or including prehab/rehab exercises specific to your needs.
- **Available Equipment:** What equipment do you have access to? Options could include: a full gym, basic home setup (dumbbells, kettlebells, resistance bands), or no equipment at all. Eden can design effective programs from bodyweight-only (using things like push-ups, air squats, etc.) up to advanced gym machinery. Knowing what’s available (e.g. a pull-up bar, a barbell set, leg press machine, etc.) helps us tailor the plan.
- **Time & Frequency:** How many days per week can you allocate to strength training, and how long can each session be? If you only have 30 minutes, we’ll make them count with supersets. If you have 4 days a week, we might do a split routine. Also, what time of day do you prefer to exercise (morning, lunchtime, evening)? We can schedule heavier workouts at times you typically feel most energetic.
- **Personal Goals (Aesthetics or Performance):** Are there specific “frame” goals you have? Examples: “I want to tone my arms,” “I want to be able to do a pull-up,” “I’d like to add 5 pounds of muscle,” “I want a stronger core to fix my back pain,” or “I’m training for a hiking trip.” Knowing this allows Eden to bias the program (e.g. extra core work if back pain is an issue, or specific training for an upcoming

physical challenge). We love concrete goals – like deadlift your bodyweight, or improve bone density by X% on your next scan – as they provide motivation and a target to hit.

- **Flexibility & Balance Focus:** Do you currently do any flexibility or balance work (yoga, Pilates, stretching)? Also, how would you rate your flexibility and balance now? (e.g. “I can’t touch my toes,” or “I often feel wobbly on one foot.”) This will guide how much emphasis we put on mobility and balance training initially.
 - **Recovery & Support:** How do you usually feel after workouts? (For instance, do you recover quickly or do you experience significant soreness/fatigue?) And do you have access to any recovery modalities (massage, foam roller, hot tub, sauna)? This info will let Eden incorporate recovery strategies appropriate for you, especially as training intensifies.
 - **Nutrition & Supplements:** Are you following any particular diet or taking supplements related to muscle/bone health? (For example, high-protein diet, collagen supplements, etc.) Also, any dietary restrictions (vegetarian/vegan, lactose intolerant) that might affect protein or calcium intake? We’ll tailor nutritional advice to ensure you get what you need for building your frame within your dietary preferences.
 - **Lifestyle Physical Demands:** What does your daily life require physically? (Job or hobbies: e.g. you have a physical job lifting boxes, or you garden on weekends, or you’re mostly at a desk.) If your daily life is already strenuous, we will adjust training volume to avoid overtaxing you; if it’s sedentary, we know we need to deliberately add more activity. Also, any sports or activities you currently do (golf, tennis, etc.) – we’ll complement those with appropriate training and make sure training doesn’t detract from them (or even improves your performance in those activities!).
-

Metabolism (Metabolic Health & Energy Regulation)

Primary Focus: The Metabolism domain centers on optimizing your body’s internal chemistry – blood sugar control, insulin sensitivity, body composition (fat-to-lean ratio), and overall metabolic flexibility (the ability to efficiently use carbs *and* fats for fuel). By honing metabolism, Eden aims to reduce risks of diabetes, obesity, and metabolic syndrome while improving daily energy levels and even cellular health. Think of this domain as tuning your “engine” to run smoothly and efficiently for decades.

Primary Goal(s)

- **Improve Insulin Sensitivity:** Enhance how responsive your cells are to insulin, so that blood glucose is managed effectively. Better insulin sensitivity means lower fasting insulin levels and reduced risk of type 2 diabetes. Essentially, the goal is to avoid the blood-sugar rollercoaster – keeping glucose in a stable, healthy range throughout the day, thereby preventing metabolic syndrome. High insulin sensitivity also links to less abdominal fat and better energy levels.
- **Achieve Metabolic Flexibility:** Train the body to seamlessly switch between burning carbohydrates and fats as fuel depending on availability. A metabolically flexible system can tap into stored fat during fasting or low-carb periods and handle carbs when they’re consumed without huge spikes. This improves endurance (you don’t “crash” when a meal is delayed) and supports weight management. We want you equally comfortable running on a meal or on stored energy.
- **Optimize Body Composition:** Shift the body composition toward a healthy lean mass to fat mass ratio. For someone overweight, this means **fat loss** while preserving or even increasing muscle (in conjunction with the Frame protocol). For someone lean, it might mean a slight increase in muscle and ensuring body fat is in an optimal range (rough guideline: perhaps ~15–25% for women, ~10–

18% for men – individualized per age and context). Reducing visceral fat (the deep belly fat around organs) is a priority, as it's metabolically harmful. The goal is a body that is metabolically “quiet” – low inflammation and proper hormonal balance.

- **Stable Energy & Reduced Chronic Inflammation:** Through diet and lifestyle, minimize chronic inflammation markers (like high-sensitivity CRP) and oxidative stress that often accompany metabolic issues ⁵. The target is to improve markers such as triglycerides, HDL cholesterol, liver enzymes, and blood pressure as they relate to metabolic health. A practical goal is that you feel steady energy throughout the day (no afternoon crashes), and internally your blood markers move toward the optimal ranges (e.g. lower triglycerides, higher HDL, lower fasting glucose).
- **Longevity of Metabolic Organs:** Protect organs like the pancreas (which produces insulin) and the liver (central to metabolism). For example, preventing non-alcoholic fatty liver disease by keeping liver fat low, and preserving beta-cell function in the pancreas by not overtaxing it with constant high glucose demand. This goal is about long-term prevention – setting you up so that in your 70s and 80s, you *don't* develop diabetes, cognitive decline, or cardiovascular disease that are all tied to metabolic dysregulation.

Key Metrics

- **Fasting Glucose & HbA1c:** Track fasting blood glucose level (optimal ~75–90 mg/dL). Additionally, hemoglobin A1c (a 3-month average of blood sugar) is a key metric – aim for an A1c in the low 5's (%) or below (e.g. ~4.8–5.4% as a general optimal range). Improvement here indicates better long-term glucose control. For instance, if your A1c is 5.8% (pre-diabetic), the goal might be to bring it down to ~5.2% over 6–12 months through interventions ²⁰.
- **Fasting Insulin & HOMA-IR:** Fasting insulin levels (optimal might be < 6 µIU/mL) are a sensitive marker of insulin sensitivity – high insulin can indicate insulin resistance even if glucose is normal. HOMA-IR is an index calculated from glucose and insulin; it gives an integrated view of insulin sensitivity. We aim to lower these values (e.g. cut fasting insulin in half if it's elevated). *If lab testing is accessible*, this is a great progress marker that often improves *before* visible fat loss.
- **Body Weight & Circumferences:** While weight alone isn't everything, it's a metric we track in context with others. More specifically, **waist circumference** (measured at navel) is highly indicative of visceral fat – goals often include reducing waist size (for example, losing 2 inches of waist over a few months). Body mass index (BMI) can be noted, but body composition (fat % vs muscle %) is more useful. We can use smart scales or calipers to estimate body fat percentage periodically. The trend (downward for fat%) is the key, not any single reading.
- **Blood Lipids (Triglycerides & HDL):** Metabolic health reflects in the triglyceride to HDL ratio. High triglycerides and low HDL suggest insulin resistance. Our target is to reduce triglycerides (e.g. <100 mg/dL is great) and raise HDL (for men >40 mg/dL, for women >50, or higher is better) ²¹. For example, if starting triglycerides are 180, aim to bring that down below 100 with dietary changes (like cutting refined carbs) and omega-3 intake ¹¹. The trig/HDL ratio ideally will move below ~2.0.
- **Inflammatory Markers:** High-sensitivity C-reactive protein (hs-CRP) is a general inflammation marker often elevated in metabolic syndrome. If available, we'd like to see CRP <1.0 mg/L (the lower, the better within reason) ²². Another metric is liver enzymes (ALT, AST); elevated ALT can indicate fatty liver – the goal is to normalize them (ALT into the teens/low 20s U/L).
- **Continuous Glucose Monitoring (CGM) or Post-Meal Glucose:** If you use a CGM or even a glucometer, we track **glycemic variability** and postprandial glucose. Metrics include: peak glucose after meals (aim <140 mg/dL ideally), and time-in-range (percent of day your glucose is in normal range ~70–140). We want fewer spikes and quicker returns to baseline. For example, if a high-carb

meal currently spikes you to 180 mg/dL for 2 hours, the goal is either modifying that meal or your metabolism so that maybe you only hit 140 and come back down within 1 hour.

- **Ketosis Markers (Optional):** For those integrating low-carb or fasting, occasional measurement of blood ketones or a ketone breath meter can be a metric of metabolic flexibility (ability to switch to fat-burning/ketosis). It's optional – not everyone needs to chase ketosis – but if weight loss or insulin sensitivity is a big goal, seeing your body produce ketones (even modestly, 0.5–1.0 mmol) during fasting periods indicates you are metabolically flexible.
- **Subjective Energy & Cravings:** Though not a lab metric, how you *feel* is crucial. We'll gauge progress by improvements in daily energy stability (no more "afternoon crash" or severe 3pm sugar cravings) and reduction in cravings for sweets or carbs (a sign of more stable blood sugar). You might report, for example, "I feel fewer energy slumps and I'm not ravenous at 10am anymore" – that qualitative feedback is a metric of success in the metabolic domain.

Protocols

- **Personalized Nutrition Plan (Whole Foods Focus):** Adopt a **whole-foods diet** that emphasizes low-glycemic, nutrient-dense foods to stabilize blood sugar and improve metabolic markers. Eden will tailor to your preferences, but general principles: plenty of fiber-rich vegetables, adequate lean protein, and healthy fats, while minimizing refined carbohydrates and added sugars. For example, shift from sweetened breakfast cereal to eggs with sautéed veggies, or from white rice to quinoa or cauliflower rice with your meals. Diets like the Mediterranean diet have robust evidence for improving metabolic syndrome ¹⁰ – rich in fruits, veg, legumes, nuts, olive oil, fish – and can be a great default framework. We'll incorporate high-fiber carbs (e.g. oats, beans, berries) and healthy fats (avocado, olive oil, nuts) which lead to gentler blood sugar response. Overall, **plate composition** might be ~1/2 non-starchy veggies, 1/4 lean protein, 1/4 complex carbs, plus a bit of good fat. This provides steady energy and satiety. As your metabolism improves, you should notice less post-meal fatigue and better appetite control. *(No extreme or faddish diets are imposed by default, but we apply the best of various approaches with scientific backing.)*
- **Time-Restricted Eating (TRE):** Implement a **daily eating window** to give your body a metabolic rest. A conservative start might be a 12-hour window (e.g. 8am to 8pm eating, 8pm to 8am fasting overnight). The stretch goal, if it fits your lifestyle, is a 16:8 pattern (16 hours fasting, 8 hours feeding, such as 11am–7pm eating window). Scientific studies show that early time-restricted feeding (e.g. finishing dinner by early evening) can improve insulin sensitivity, blood pressure, and oxidative stress even without weight loss ²³. The key is consistency – by fasting each night, you allow insulin levels to fall and cells to up-regulate fat burning. We'll customize TRE timing to when you naturally aren't hungry or when work/social life allows. During the fasting period, stick to water, black coffee/tea, or electrolytes (no calories). *Conservative minimum:* at least a 12-hour overnight fast most days (which aligns with normal circadian rhythm). *Stretch goal:* a well-tolerated 16-hour fast most days, and perhaps occasionally extending to 24 hours once a week or month for additional metabolic benefit (optional and only if you feel comfortable). We will monitor how you feel – the aim is to reduce fasting glucose/insulin and improve metabolic flexibility without causing stress or energy crashes.
- **Balanced Meal Composition & Carb Timing:** To further smooth glucose levels, Eden will guide you in **structuring meals** strategically. This includes:
 - Eating **protein and veggies first** in a meal before starchy carbs – this blunts blood sugar spikes (fiber and protein slow carbohydrate absorption).
 - Choosing **low-glycemic carbs** most of the time (e.g. sweet potato over white bread, berries over candy). For instance, swap fruit juice for whole fruit, or white pasta for lentil or whole-grain pasta.

- **Healthy fats** in moderation at meals (avocado, olive oil, nuts) to promote satiety and steady digestion.
- If you enjoy carbs, consider **carb timing** around activity: consume higher-carb foods in a window after exercise when your insulin sensitivity is highest (your muscles will soak up glucose for recovery). This could mean having most of your starchy carbs (like whole grains or potatoes) in a post-workout meal or at dinner rather than early in the day.
- Ensure **adequate protein each meal** (~20–30g) to help control hunger and support muscle (tying into Frame domain) ¹⁸. This also helps prevent overeating carbs and keeps metabolic rate up.
- **Avoid ultra-processed foods** as much as possible – their combination of high sugar, unhealthy fats, and additives can derail metabolism. Instead of soda, drink water or tea; instead of a donut, perhaps Greek yogurt with nuts.
- **Weight Management Strategy:** If weight loss is needed for you, Eden will establish a gentle caloric deficit through diet and increased activity. This might involve a meal plan or calorie targets that are, say, 300–500 kcal below your estimated maintenance. We prefer to do this **without** extreme hunger or crash diets – by filling you up on high-fiber, high-protein foods. You'll have plenty of vegetables, lean proteins, and water intake, which naturally curb appetite. Expect a sustainable fat loss of about ~0.5 to 1 kg per week (depending on starting point; slower if you're only mildly overweight). We will adjust as you progress; plateaus are addressed by either a slight increase in activity or subtle cut in calories. *If you are at a healthy weight or underweight*, the focus shifts to weight maintenance or healthy weight gain (increasing lean mass via extra protein and maybe an extra snack). Regular weigh-ins (e.g. weekly) and waist measurements can keep us on track, but we avoid obsessive daily weigh-ins – trends matter more.
- **Regular Physical Activity (Exercise Integration):** The exercise protocols in **Heart** and **Frame** domains double as metabolic boosters. Continue to follow those: aerobic exercise (especially Zone 2 cardio) improves insulin sensitivity and mitochondrial function ²⁴ ²⁵, and resistance training increases muscle, which raises resting metabolic rate and glucose uptake ²⁶. To explicitly harness this for metabolism:
- Do a **post-meal walk** whenever feasible. Even a 10-15 minute walk after meals, particularly after your largest meal, can significantly blunt blood glucose spikes ²⁷. This is a simple but powerful habit – for example, after dinner, take a brisk walk around the block. It helps muscles soak up glucose for fuel, leading to a lower postprandial sugar level and improved 24h glucose control. Studies show as little as 5-10 minutes of walking an hour after eating benefits blood sugar ²⁷.
- Incorporate some **high-intensity bursts** in your week (as noted in Heart domain) – HIIT not only helps VO₂ max but also improves insulin sensitivity and glucose transport in muscles. Think of it as unlocking glucose pathways; your muscles become like sponges for blood sugar after intense exercise.
- Increase **NEAT** (Non-Exercise Activity Thermogenesis): all the movement you do outside the gym. This includes taking stairs, doing household chores, gardening, walking while on phone calls. Such daily movements can cumulatively burn calories and improve insulin action without “exercise” per se. For example, if you have a desk job, aim to stand up and move for 5 minutes each hour (set a timer if needed).
- **Stretch goal:** consider trying **different intensities at different times** (metabolic flexibility training). For example, occasionally do fasted cardio in the morning (once you're adapted) to encourage fat-burning pathways, and other times do a carb-fueled workout to train carbohydrate use. This varied approach can signal your body to be ready for anything.
- **Intermittent Fasting & Periodic Longer Fasts (Advanced):** Building on TRE, if appropriate and medically cleared, we may experiment with slightly longer fasts for metabolic benefits. For instance, a 24-hour fast once a week or a 48–72 hour fast once every few months (this is optional and

definitely a stretch goal, not required). Such fasts can boost autophagy and insulin sensitivity, and are used by some longevity experts. However, Eden will only include this if you're comfortable, have no contraindications (e.g. not for those who are pregnant, have an eating disorder history, etc.), and have built up fasting tolerance through TRE. Even without longer fasts, the combination of daily TRE and exercise will yield most of the benefits.

- **Stress and Sleep for Metabolism:** Recognize that **chronic stress and poor sleep impair metabolism** (raising cortisol and insulin resistance) ²⁰. So as part of metabolic protocol, we reinforce the Recovery domain: ensure 7–9 hours of quality sleep and practice stress reduction. Lack of sleep, for example, has been shown to significantly increase insulin resistance and blood sugar levels ²⁰. Thus, an evening wind-down and proper sleep hygiene are *metabolic interventions* as much as they are recovery ones. Similarly, high stress can drive overeating and fat storage; Eden will help with mindfulness techniques (see Mind domain) to manage emotional eating or stress eating triggers.
- **Hydration and Timing of Caffeine:** Stay well-hydrated (water has metabolic benefits in fat oxidation and kidney function). Aim for ~2–3 liters of water daily, more if active or in hot climates. Proper hydration can slightly increase metabolic rate and help control appetite (thirst is often mistaken for hunger). As for **caffeine**, moderate intake (e.g. a cup of coffee or two) can boost metabolism acutely and improve focus, but avoid consuming it late in the day (cut off by ~2pm) to prevent sleep disturbance. Also, avoid loading your coffee with sugar – consider using cinnamon or a dash of cream instead of sugar syrups, to keep it metabolically friendly.
- **Key Supplements (Metabolic Support):** Non-pharmaceutical supplements that have evidence for metabolic health include:
 - **Berberine:** A plant alkaloid that in studies acts similarly to metformin. It can help lower blood glucose and improve insulin sensitivity. For example, meta-analyses have found berberine can significantly reduce HbA1c and fasting glucose in type 2 diabetics ²⁸. A common regimen is 500 mg berberine before two or three main meals. Eden might recommend this as a *stretch* supplement if your glucose is elevated, and if you tolerate it (can cause GI upset in some).
 - **Magnesium:** Many people are magnesium deficient, which can impair insulin sensitivity. Magnesium supplementation (200–400 mg/day, typically at night) has been shown to modestly improve blood sugar control in those who are low. Plus it helps with sleep, hitting two domains at once.
 - **Omega-3 Fish Oil:** As mentioned in Heart domain, omega-3s also aid metabolism by lowering triglycerides and possibly reducing inflammation in fat tissue ¹¹. Typically 1–3 g/day of combined EPA/DHA with meals.
 - **Apple Cider Vinegar:** A folk remedy with some evidence – taking 1–2 tablespoons of apple cider vinegar (diluted in water) before a high-carb meal can reduce the post-meal blood sugar spike by slowing gastric emptying and improving insulin sensitivity. It's a gentle tool; we can try it if large dinner spikes are an issue.
 - **Probiotics & Fiber:** A healthy gut microbiome is linked to better metabolism. If your diet is lacking fiber, adding a soluble fiber supplement (like psyllium husk or inulin) can improve gut health and help flatten blood sugar curves by slowing carb absorption. Certain probiotic strains (like *Akkermansia* or *Bifidobacterium* strains) are being researched for metabolic benefits; Eden can consider a broad-spectrum probiotic if appropriate.
 - **Green Tea (EGCG):** Green tea extract or simply drinking 2–3 cups of green tea daily can slightly boost metabolic rate and assist fat oxidation. It's not a magic bullet, but a supportive habit (plus it provides hydration and antioxidants).
- Eden will ensure no supplement overlaps or conflicts. All are optional; the foundation remains diet and exercise. Supplements are the “fine-tuning” if needed.

- **Monitoring & Iteration:** Metabolic changes can be subtle, so regular monitoring helps. Eden may suggest using a **CGM** for a 2-week period early on to gather data on how your blood sugar responds to different foods and habits. We'll identify any troublesome foods (maybe that daily mid-morning bagel spiking you, for instance) and tweak accordingly. Likewise, periodic blood tests (every 3–6 months) for glucose, insulin, lipids can objectively show improvement – nothing is more motivating than seeing your triglycerides drop by half, or your fasting insulin go from 15 to 7. Eden will adapt the protocol based on these results: plateau in weight loss = we adjust calories or increase cardio; if glucose still high in morning = perhaps add a walk before breakfast or adjust dinner composition. This dynamic adjustment is akin to how a high-performance coach like Peter Attia would personalize for a client.

Customization Questions

- **Dietary Preferences & Restrictions:** What type of diet do you follow or prefer? (e.g. omnivore, vegetarian, vegan, keto, Mediterranean, etc.) Also list any food allergies or strong dislikes. Eden will create a metabolic plan that you *enjoy* and can adhere to – no use recommending fish if you hate fish (we'll find alternatives like algae-based omega-3s). We need to know if you're open to animal proteins or if we'll focus on plant-based proteins, etc.
- **Current Eating Habits:** Describe a typical day's eating pattern and meals. What do you eat for breakfast, lunch, dinner, snacks? And at what times? Understanding your baseline helps us identify which habits to tweak. For instance, if you currently skip breakfast but snack late at night, we might formalize that into a time-restricted eating schedule. Or if you have a very carb-heavy dinner, we might adjust portion or composition. Also, do you drink sugary beverages or lots of refined snacks? Those are key areas to address and we'd like to know up front.
- **Weight Goal & History:** Are you looking to lose weight, gain weight, or maintain? What has your weight trend been over the past few years? (Stable, steadily gaining, yo-yo?) This tells us how aggressive we need to be and how your body tends to respond. If you have a history of yo-yo dieting, we'll be especially cautious to implement sustainable changes. Also, what is your height/weight (approximate) and waist circumference now? And do you have a target weight or clothing size in mind? Setting a concrete goal (e.g. lose 15 lbs, or drop 4 inches off the waist) helps measure success.
- **Metabolic Health Status:** Do you have any diagnosed metabolic conditions (prediabetes, type 2 diabetes, PCOS, hypothyroidism, etc.) or a family history of these conditions? If you have recent blood work, share key numbers (fasting glucose, A1c, cholesterol, etc.). This helps tailor the aggressiveness of interventions. For example, with prediabetes we might push more fasting and low-carb, whereas if everything is normal, we might be more moderate. Also, list any medications you take for blood pressure, lipid, or glucose control, as these inform our approach (since we're not using medications, we tailor lifestyle to complement or even reduce the need for them under your doctor's guidance).
- **Appetite & Cravings:** How is your appetite typically? Do you experience strong sugar or carb cravings, and if so, at what time of day? (Some people crave sweets at night, others get afternoon energy slumps). Understanding this can help us strategize meal timing and content (like ensuring a protein-rich afternoon snack to stave off evening sugar binges, etc.). Also, do you feel you often *overeats* or struggle with portion control? Or do you sometimes forget to eat? These patterns will shape our plan (e.g., volume of high-fiber foods to fill you up, or reminders to eat if you undereat and then binge).
- **Cooking & Food Access:** Do you cook most of your meals, or rely on restaurants/takeout? What is your skill and time for cooking? We can design a protocol that works – if you're a cooking enthusiast,

we might provide recipes; if you barely have time to cook, we'll suggest simple assembly meals or even specific healthier restaurant choices. Also mention if you have family/household considerations (cooking for kids, etc.) so we can integrate rather than create conflict.

- **Fasting Experience:** Have you ever tried fasting or skipping meals? If so, how did it go? (Some people feel fine skipping breakfast, others get dizzy or irritable ("hangry").) This will calibrate our approach to time-restricted eating. If you're new to fasting, we'll ease in gradually; if you already do 16:8, we know you can handle it. Similarly, let us know if you have any history of disordered eating or anxiety around food – if so, we will be very cautious with fasting or strict rules, focusing instead on gentle improvements.
- **Exercise & Daily Routine:** When during the day do you exercise (if you do) and do you prefer to eat before or after exercise? We want to align meal timing to support your workouts (e.g. ensure you're fueled appropriately). If you do morning workouts, we might plan a good breakfast or post-workout shake after; if you train in the evening, we ensure you have energy through the day. Also, describe your energy levels throughout the day (when do you feel most awake vs. sluggish?). That helps us decide, for example, whether a lighter lunch might prevent an afternoon slump, or if caffeine strategy needs tweaking.
- **Metrics & Monitoring Comfort:** Are you willing to track certain metrics daily or weekly? For example, daily weigh-ins or wearing a CGM for a period, or using a food logging app to track calories/macros – is that something you'd do, or do you prefer a more intuitive approach? Some people love data and structure, others feel overwhelmed by it. Eden can operate either way, but knowing your style helps (e.g., we might give a detailed macro target if you like numbers, or just qualitative guidance if you don't).
- **Support & Environment:** What does your food environment look like? (e.g., Does your family support healthy eating or are cookies and chips always in the pantry? Do you have a routine of workplace donuts or social drinking events often?) Being aware of challenges in your environment helps Eden create strategies – like if you often travel for work, we'll devise hotel and restaurant choices; if your spouse loves baking desserts, we'll find ways to fit occasional treats or healthier swaps to avoid conflict. Also, if you have a social support or accountability preference – say, sharing progress with a friend or family member – mention that, as it can be leveraged for adherence.
- **Specific Metabolic Goals:** Feel free to state any particular goals: e.g., *"reverse my prediabetes," "improve my cholesterol without meds," "fit into X size jeans," "have steady energy to play with my kids,"* or *"avoid the diabetes that runs in my family."* These goals help tailor motivational strategies and focus areas. Eden will keep these goals in sight when designing and adjusting your protocol, ensuring the plan is directly aligned with what matters to you.

Recovery (Restoration, Sleep & Renewal)

Primary Focus: The Recovery domain is all about regeneration – ensuring your body and mind repair themselves through quality sleep, rest, and stress management. High performance longevity isn't just about how hard you train or work; it's equally about how well you recover. This template will help Eden guide you to optimize sleep (duration and depth), manage stress, and incorporate recovery practices so that you can continuously improve without burning out. A well-rested body has balanced hormones, a responsive nervous system, and a stronger immune system, forming the invisible foundation under all other domains.

Primary Goal(s)

- **Enhance Sleep Quality & Consistency:** Achieve a regular sleep schedule with sufficient deep and REM sleep each night. The goal is 7–9 hours of high-quality, restorative sleep on a consistent basis ²⁹. Good sleep supports memory consolidation (helping the Mind domain), muscle repair (Frame domain), and metabolic regulation (Metabolism domain). In longevity terms, optimal sleep is associated with better cardiovascular health, cognitive function, and reduced all-cause mortality ²⁹. Essentially, we aim to wake up refreshed daily, with no chronic sleep debt.
- **Facilitate Physical Recovery:** Ensure your body has the time and resources to repair muscles, joints, and connective tissues from daily stresses and exercise. This includes managing muscle soreness, preventing overtraining, and maintaining a healthy balance between activity and rest. The goal is to improve markers like heart rate variability and reduce chronic inflammation, indicating your body is recovering well. By doing so, you'll perform better during workouts (tying back to Frame and Heart) and reduce injury risk.
- **Optimize Stress Resilience:** Lower chronic stress levels and improve your physiological stress response. This means keeping daily cortisol in a healthy diurnal rhythm (high in morning, low at night) and avoiding prolonged elevations that wreak havoc on metabolism and immunity. Goal-wise, we want to increase your *relaxation* capacity – activating the parasympathetic “rest and digest” mode readily. This translates into better mood stability, controlled blood pressure, and a calm, focused mind. Essentially, to make you as resilient as a Zen monk under pressure – or at least move a few steps in that direction.
- **Balance Hormones & Longevity Factors:** Recovery is when your body balances hormones like growth hormone, testosterone (in men and women), melatonin, and appetite hormones (leptin/ghrelin). Proper recovery should restore these to youthful patterns. For example, deep sleep boosts growth hormone which aids tissue repair, and adequate sleep keeps leptin (satiety hormone) higher and ghrelin (hunger hormone) lower, tying back to Metabolism. Another underlying goal: support immune function (since sleep and low stress improve immune surveillance, potentially impacting longevity by reducing chronic inflammation and even cancer risk). We basically aim for an internal environment conducive to healing and long-term healthspan extension.
- **Mental Recovery & Unwinding:** In addition to physical rest, recovery includes mental decompression. The goal is to allocate downtime for your mind to relax and process the day – this reduces burnout risk and enhances creativity and learning (supporting the Mind domain). It includes cultivating good sleep hygiene rituals and perhaps mindfulness or gratitude practices that signal safety and rest to your brain.

Key Metrics

- **Sleep Duration:** The average number of hours you sleep each night, tracked via a sleep diary or wearable. The target is in the 7–9 hour range consistently. Many longevity experts consider ~7–8 hours the sweet spot for adults ²⁹. If you're currently at, say, 5–6 hours, a key metric is gradually increasing that (e.g. 6.5 hours after one month, 7+ hours by three months). We also pay attention to time in bed vs. time asleep – aiming for a high sleep efficiency (>85%, meaning you're asleep most of the time you're in bed).
- **Sleep Quality Metrics:** If using a tracker (Oura ring, Fitbit, WHOOP, etc.), we'll monitor:
- **Sleep Stages:** amount of deep sleep (Slow Wave Sleep) and REM sleep each night. These are critical for physical recovery and memory, respectively. We aim for, roughly, >1–1.5 hours of deep sleep and >1.5–2 hours of REM (varies individually). Improvement might be seen by deeper sleep after implementing changes (e.g., less caffeine, cooler room = more deep sleep).

- **Sleep Onset Latency:** how long it takes to fall asleep. Ideally <20 minutes. If currently it takes you an hour to fall asleep, that's a metric we'll try to shrink by better pre-bed routine.
- **Night awakenings:** number and duration. The goal is to minimize wake-ups (perhaps zero or just brief bathroom breaks). Frequent awakenings or long ones (>5–10 minutes) point to issues we can address.
- **Resting Morning Heart Rate (RHR):** Measured each morning, often via a tracker or manually. A lower RHR and one that doesn't spike day-to-day is a good sign of recovery. If you see a jump in RHR or it's elevated, it can indicate poor recovery or an oncoming illness. We want RHR to trend downward to an optimal level as your fitness improves and stress drops (for example, going from 75 bpm to 60 bpm over months). Also, *heart rate variability (HRV)* each morning: a higher HRV is generally better (indicates a responsive autonomic nervous system). We can use HRV as a recovery score – if HRV is consistently climbing or in a good range for your age, our recovery protocols are working.
- **Subjective Energy & Mood:** Each day, note your perceived energy level (e.g. scale of 1–10) and mood state after waking. Are you groggy and irritable or refreshed and positive? Also note afternoon fatigue levels. As recovery improves, morning grogginess should lessen (perhaps you go from feeling like a zombie 3 mornings a week to only 0–1 mornings a week). Mood-wise, adequate sleep and stress reduction should correlate with feeling less anxious or overwhelmed. We may use a simple questionnaire like the Epworth Sleepiness Scale or a stress questionnaire to quantify changes. The goal is low daytime sleepiness and a stable, positive mood.
- **Stress Biomarkers:** If available, metrics like **cortisol levels** (we could do a diurnal cortisol saliva test) – we'd want to see a normal curve (high in AM, low at night) and possibly a reduction in overall exposure (lower evening cortisol especially). High chronic cortisol can be inferentially tracked by improvements in other areas: e.g. if blood pressure comes down, or if central fat decreases (since cortisol can cause belly fat). Another metric: blood pressure variability or resting blood pressure might improve with stress reduction. We also might track **Breathing rate** during sleep (some devices do) – high stress can elevate it; as you relax more, it may decrease slightly.
- **Immune Function Proxy:** Not a direct daily metric, but monitor frequency of illnesses (colds, etc.) or markers like **white blood cell count** on lab tests or **C-reactive protein**. If you rarely get sick and CRP is low <1, you're likely balancing recovery well. Conversely, if you often catch colds, it might indicate overtraining or lack of rest. Over months, we aim for a decrease in sick days.
- **Training Recovery Indicators:** If you're also training (Frame/Heart), we'll use performance as a gauge. Are you able to increase weights/reps as planned? Do your legs still feel dead 3 days after a workout or are you bouncing back faster? Tracking a **rate of perceived recovery** or using something like a WHOOP recovery score (if you have it) can quantify this. Another simple marker: **morning soreness/stiffness** scale, aiming to reduce chronic soreness (except expected acute soreness after new exercises).
- **Lifestyle Balance Metrics:** This could be as simple as the number of **rest days** you actually take per week (target at least 1 full rest day ³⁰) or how many **vacation days** or off-the-grid weekends you take per quarter to recharge (if relevant to you). It might sound odd as a metric, but high-achievers often neglect breaks – so we may literally set a goal like “take X evenings off work per week” or “No work email after 8pm” and monitor compliance. The outcome, while qualitative, can then be correlated with how you feel.

Protocols

- **Consistent Sleep Schedule:** Establish a regular sleep-wake rhythm by **going to bed and waking up at the same times each day**, even on weekends (with at most ~1 hour variation). The body's

circadian clock craves consistency. Identify a target bedtime that allows ~8 hours before your alarm – e.g. in bed by 11:00 pm to wake at 7:00 am. Treat this like an important appointment with yourself. If you currently sleep at erratic times, adjust gradually (15–30 minutes earlier each night) until the desired schedule is reached. Over time, your body will start to get sleepy naturally at the set time. This consistency leads to deeper sleep and easier morning wake-ups ²⁹. *Conservative minimum*: at least 5 nights a week on the same schedule. *Stretch goal*: full 7 days consistency (with rare exceptions for social events).

- **Sleep Environment Optimization**: Transform your bedroom into a **sleep sanctuary**. Key steps:
 - Make it **dark**: Use blackout curtains or an eye mask; even small light (LEDs, streetlights) can impair melatonin. We want pitch-black darkness at night.
 - Keep it **cool**: Ideal sleep temperature is around 65°F (18°C). Ensure your bedroom is cool – use a fan or AC if needed. Cooler body temp at night promotes deeper sleep.
 - Keep it **quiet**: If you live in a noisy area, consider earplugs or a white noise machine/fan. Silence (or consistent quiet noise) prevents micro-awakenings from sound.
 - Reserve the bed for **sleep and intimacy only** – avoid working or watching intense shows in bed, so your brain associates it only with relaxation.
 - Ensure your mattress and pillow are comfortable and supportive for you – if you wake with back or neck pain, that's a sign to evaluate your bedding.
- **Electronics**: No TVs blaring in the bedroom, and ideally put phones on Do Not Disturb at night. Crafting this environment can significantly improve sleep efficiency and quality without any extra effort from you once set.
- **Evening Wind-Down Routine**: Implement a 30–60 minute **pre-sleep routine** to transition from high-energy day to restful night. For example:
 - Dim the lights (use warm, low-intensity lighting or lamps) in the last hour before bed. Consider **blue-light blocking glasses** in the evening if you have to use screens – blue light suppresses melatonin.
 - Shut off screens/devices at least 30 minutes (ideally 60) before bed. If you must use them, use night mode or apps like f.lux to reduce blue light.
 - Engage in calming activities: read a (non-work) book (preferably a relaxing or happy one, not a thriller), do gentle stretching or yoga, take a warm bath or shower (which can aid sleep onset by cooling your core afterward), or practice relaxation exercises (like deep breathing or progressive muscle relaxation).
 - You might drink a **herbal tea** such as chamomile, valerian root, or lavender tea 60–90 minutes before bed – these can promote sleepiness (ensure it's non-caffeinated and not too much liquid right before bed to avoid nighttime bathroom trips).
 - Try writing in a **journal** or planner if you have a racing mind – jot down any nagging to-dos or worries for the next day to “park” them, so your mind can let go.
 - Incorporate **mindfulness meditation** if you're open to it: even 5–10 minutes of sitting quietly focusing on your breath can significantly reduce physiological stress and prime you for sleep. (It's been shown to improve insomnia symptoms and cognitive function ³¹). The routine will be personalized, but the idea is to send a clear signal to your body that it's safe to relax and sleep. Over weeks, this routine itself will start making you feel sleepy on cue.
- **Cut Caffeine & Limit Alcohol**: Manage substances that disturb sleep architecture. **Caffeine**: if you consume it, set a **caffeine curfew** in the early afternoon. Generally, no caffeine after ~2 p.m. (at least ~8 hours before bedtime) ²⁰. Caffeine's half-life can keep you wired or reduce deep sleep even if you fall asleep on time. So that 4 p.m. espresso is out. If you're very sensitive, even a 12 p.m. cutoff or total elimination might be needed. We can substitute with decaf or herbal alternatives for the ritual if needed. **Alcohol**: While a nightcap can make you fall asleep faster, it wrecks sleep quality (reduces REM, causes midnight awakenings). So aim to limit alcohol, especially within 3 hours of

bedtime. If you drink, moderate amounts (1 drink) and earlier in the evening are better. Many clients find cutting alcohol after dinner dramatically improves sleep quality (you might notice higher HRV, lower RHR immediately).

- **Active Recovery Modalities:** Incorporate **gentle recovery practices** especially on rest days or after intense workouts:
- **Stretching/Foam Rolling:** Spend 10 minutes in the evening or post-workout doing foam rolling or static stretches for tight muscle groups. This increases blood flow and signals muscles to relax, reducing next-day soreness.
- **Massage or Self-Massage:** If feasible, get a professional massage maybe monthly (stretch goal) or use self-massage tools (lacrosse ball, massage gun) weekly to work out knots. Massage can lower stress hormones and promote deep recovery.
- **Hydrotherapy:** Contrast showers (alternating hot and cold water) or simply a warm Epsom salt bath can aid muscle recovery and improve sleep. The magnesium from Epsom salt baths can be absorbed transdermally and help relax muscles.
- **Sauna** (if accessible): Sauna therapy (e.g. 20 minutes in a dry sauna a few times a week) has evidence for improving cardiovascular conditioning and can aid recovery by increasing circulation. Finish sauna at least an hour before bed though (it initially raises heart rate).
- **Active recovery workouts:** e.g. a very light cycling session or a brisk walk on rest days to promote blood flow without stress. These modalities ensure your Frame domain efforts don't accumulate excessive fatigue. They're the kind of "luxury" recovery tactics that high-performance coaches like to include for their clients to go above minimums.
- **Breathwork & Relaxation Breaks:** We often carry tension and shallow breathing through the day. Implement **mini relaxation breaks** during your workday. For instance, practice the 4-7-8 breathing technique (inhale 4 sec, hold 7 sec, exhale 8 sec) for a few cycles when you find yourself stressed or before bed. Or try 5 minutes of **diaphragmatic breathing** at lunch (breathe deeply into belly, long exhales). These exercises directly activate the parasympathetic nervous system, lowering heart rate and cortisol. Over time, you'll strengthen your relaxation response like a muscle. We could also explore **guided meditation apps** (Headspace, Calm) if you're new to meditation – even a 10-minute guided session in the afternoon can reset your stress. *Stretch goal:* adopt a daily meditation habit (e.g. 10 minutes every morning or evening) – this has broad benefits from stress reduction to improved attention ³¹ and even possibly longer telomeres in some studies. Eden will gauge your interest and tailor (some people prefer secular mindfulness, others prayer or breathing – any method to calm the mind works).
- **Digital Sunset & Mental Offloading:** Set a **cutoff time for stimulating activities** in the evening. For example, no work emails or intense mental tasks at least 1 hour before bed. Create a buffer zone where your mind can downshift. If you find your mind races at night, incorporate a practice to **offload thoughts:** keep a notepad by the bed to jot down any idea or "to-do" that pops up, so you don't ruminate on it. Consider reading fiction or listening to calming music (white noise, nature sounds, or binaural beats designed for relaxation) instead of screen media. If you watch TV to unwind, choose content that is light or familiar (now is not the time for a horror or very suspenseful show that raises adrenaline). These practices prevent a spike in stress hormones near bedtime and help you detach from the day's worries.
- **Weekend Recovery & Daylight:** Use days off strategically for recovery. Try to get **natural daylight, especially in the morning** – bright light in your eyes within 30–60 minutes of waking (ideally 10–20 minutes outside) helps set your circadian clock properly (making nighttime melatonin secretion more robust) and also lifts mood. On weekends or free days, don't drastically oversleep (sleeping in by 2–3 hours confuses your circadian rhythm – known as "social jetlag"). Instead, maybe take an **afternoon nap** if needed. Short naps (20–30 minutes) can be very rejuvenating and improve

cognitive function, but keep them early (before 3pm) and short to not impair night sleep. If your week is hectic, consider making Sunday afternoons a dedicated recovery period: e.g. technology fast for a few hours, take a slow walk, do gentle yoga, meal prep calmly for the week. Also ensure you schedule **joyful relaxation**: hobbies that relax you (gardening, painting, casual time with friends/family) – these reduce stress hormones. The goal is to proactively recharge rather than collapse from exhaustion.

- **Supplements & Aids for Sleep (If Needed):** Eden prefers behavioral approaches first, but some aids can be considered:
- **Magnesium Glycinate or Bisglycinate:** (~300 mg an hour before bed) helps relax muscles and nerves, and can improve sleep quality, as magnesium has calming effects on the nervous system.
- **Melatonin:** A low dose (0.5–3 mg) of melatonin taken ~30 minutes before bedtime can help if you have trouble falling asleep or if your schedule is shifted (jet lag, etc.). Melatonin is a hormone that signals darkness to your body. We use it sparingly – short-term or low-dose – as a tool to establish a rhythm, not as a nightly “must” forever (unless it’s very beneficial for you). Even timed-release melatonin can help with maintaining sleep if early awakenings are an issue. Always start with the lowest effective dose (even 0.3 mg can work for some people).
- **Herbal Supplements:** Such as **Valerian root**, **Ashwagandha**, or **L-theanine**. Valerian can improve sleep latency (but may cause vivid dreams for some). **Ashwagandha** is an adaptogen that can reduce anxiety and cortisol – studies and meta-analyses show it can significantly lower stress and cortisol levels ³², indirectly aiding sleep and recovery. Some people take 300–600 mg of high-concentration ashwagandha extract in the evening for calming effect. **L-theanine** (100–200 mg), an amino acid from green tea, promotes relaxation without sedation and can take the edge off mind racing.
- **Glycine:** 3 grams of glycine (an amino acid) at night might improve sleep onset and quality by slightly lowering body temperature and calming the brain.
- We’ll avoid any dependence-forming sleep meds; these protocols aim to get you sleeping naturally. Supplements are optional and we’d evaluate their effect – for example, try magnesium first (since many people are deficient), then consider others if needed.
- **Monitor and Adjust Recovery Load:** Eden will keep an eye on your overall load vs. recovery. We might use an app or journal to have you rate your stress and fatigue each day. If we see patterns like consistently high fatigue or worsening mood, it’s a flag to increase recovery: maybe introduce an extra rest day, deload your training week, or enforce an earlier bedtime. Likewise, if your metrics show excellent recovery (HRV high, you feel great), we know we can safely push a bit harder in training if desired. This dynamic adjustment is analogous to how a personal longevity coach would tweak a client’s plan – balancing stimulus and recovery to maximize gains without hitting burnout. Remember, progress happens in recovery; Eden’s job is to make sure you get that critical downtime.

Customization Questions

- **Current Sleep Habits:** On average, what time do you go to bed and wake up on weekdays and weekends? How many hours of sleep do you *think* you get? (And do you feel that’s enough?) Do you have trouble falling asleep, staying asleep, or waking up too early? This will pinpoint which part of sleep needs most work (sleep onset vs. maintenance).
- **Sleep Environment & Disturbances:** Describe your sleeping environment. Is your bedroom dark and quiet? Do you share the bed (with a partner, kids, or pets) and does that impact your sleep? (e.g. a partner who snores or a pet that moves around might affect strategy.) Do you use any sleep tech (smart mattress, noise machine)? Also, do you often have to get up at night (for bathroom, etc.)? Understanding disruptions will guide solutions (like limiting fluids at night, or earplugs for noise).

- **Use of Stimulants/Substances:** How much caffeine do you consume per day, and when (morning only, or later)? Do you use other stimulants (energy drinks, nicotine)? And what about alcohol – how many days per week and roughly how much? This information is critical as we tailor advice on cut-off times or reduction strategies to improve sleep. Also mention if you use any sleep aids currently (prescription or OTC) – Eden can help create a plan to rely on them less if appropriate.
- **Stress Profile:** On a scale of 1–10, how would you rate your average daily stress level? What are the biggest sources of stress in your life right now (e.g. work, family, financial, health concerns)? How do you currently cope with stress (for example: exercise, meditation, watching TV, talking to friends, etc., or possibly maladaptive ones like overeating or alcohol)? Understanding your stressors and current coping mechanisms will allow Eden to integrate more effective or healthier stress-relief techniques that suit you. Also, do you ever experience anxiety or panic, or symptoms of chronic stress (headaches, jaw clenching, digestive issues)? These clues help target areas like perhaps jaw relaxation exercises or gut-focused stress relief if needed.
- **Recovery Feelings:** Do you often feel **fatigued or burnt out**? If so, at what times of day or week? (For example, “By Thursday I’m exhausted,” or “Every day around 3pm I crash,” or “I feel okay, except after very hard workouts I’m wiped for two days.”) This subjective feedback guides how aggressively to push training and how much emphasis to place on recovery modalities. If you’re frequently exhausted, we might dial down training and focus more on sleep/nutrition first. Also, do you rely on stimulants (coffee, sugar) to get through the day? That indicates poor recovery we’d want to fix at the root.
- **Existing Recovery Practices:** Do you do anything currently to aid recovery or relaxation? (e.g., “I take yoga class once a week,” “I get a massage once a month,” “I love sauna,” “I often watch ASMR videos to relax,” etc.) Also, any supplements you take for sleep/stress like melatonin, magnesium, herbal teas? Eden will build on what already works for you and ensure not to duplicate or conflict with your habits.
- **Nighttime Routine:** Walk us through your last hour or two before bed on a typical night. (Do you watch TV in bed? Scroll on the phone? Read? Snack? Work on laptop?) And what’s your pre-bed mindset – are you anxious, relaxed, mentally active? This will help Eden fine-tune your wind-down routine. For example, if you currently work until 10 pm and then try to sleep at 10:30, we know we need to insert a buffer. If you watch TV to relax, maybe we suggest a different kind of show or a time limit.
- **Sleep Disorders or Conditions:** Have you ever been diagnosed with a sleep disorder (insomnia, sleep apnea, restless legs, etc.) or do you suspect one? (For instance, loud snoring or witnessed apnea could indicate sleep apnea – important to address medically.) If yes, are you using any treatment (CPAP for apnea, medication for insomnia)? Eden’s protocol will complement any medical treatment – e.g., still doing weight loss and avoiding alcohol for apnea, or cognitive-behavioral strategies for insomnia. If you have chronic insomnia, Eden might incorporate cognitive behavioral therapy for insomnia (CBT-I) techniques, which could involve specific question sets, etc. So knowing any formal issues is key.
- **Work/Life Schedule Constraints:** What is your work schedule like? (Shift work? Regular 9–5? Frequent travel across time zones?) Irregular schedules or shift work will require specialized strategies (like carefully planned light exposure, melatonin timing, etc.). If you travel often, we might create a “jet lag plan” template for you. If you’re a night shift worker, we’ll discuss managing that (it’s challenging for recovery, but mitigations exist). Also, how many hours do you typically work per week and do you bring work home? This helps gauge your mental load.
- **Hobbies and Relaxation:** How do you like to relax in your free time (if you have any)? Some people naturally relax by reading, some by socializing, some by playing video games. We won’t force you to meditate if, say, relaxing cooking is your happy place – instead, we’ll encourage you to do that

regularly. Identifying activities that genuinely recharge you (versus ones that just numb you) will be part of the plan. Also, do you engage in any mindfulness or spiritual practice currently? If you do (like prayer, or a gratitude journal, or tai chi), we'll integrate that as it likely helps your stress.

- **Support System & Responsibilities:** Do you have caregiving responsibilities (young kids, eldercare) that wake you up at night or limit your downtime? If you have a newborn or a family situation that interrupts sleep, our goals will adjust (perhaps focus more on naps or other restorative practices to cope with unavoidable sleep loss). Also, how supportive are people around you regarding you prioritizing rest? (For example, will your spouse cooperate in an earlier bedtime or reducing late TV? Can chores be delegated to free up an evening?) Knowing potential external challenges or helps allows Eden to strategize (maybe involving family in a "wind-down" time, etc.).
- **Mindset & Personality:** Would you describe yourself as a "high gear" person who struggles to slow down? (Many high performers find relaxation difficult or feel guilty being "unproductive.") This helps us frame recovery in a way that appeals – e.g., showing that recovery *is* productive (it improves performance), or giving you "tasks" like meditation as a challenge to gamify relaxation. If, on the other hand, you already value chill time but just haven't optimized it, we'll focus on structure. Also, do you track things and like tech (would you wear a sleep tracker or HRV monitor)? Or would that stress you out? We only use tracking if it aids you, not if it causes anxiety.
- **Specific Recovery Goals:** Are there concrete outcomes you want from improving recovery? For instance, *"I want to wake up without an alarm and feel refreshed," "I want to stop feeling sore all the time," "I want to reduce my blood pressure through relaxation,"* or *"I'd like to handle work stress without losing sleep over it."* These will direct our focus – whether it's more on sleep, or muscle recovery, or stress resilience at work, etc. Also, if you've noticed anything like *"I always get sick during busy season"* or *"I hit a wall every afternoon,"* mention that, as it's something we can target and measure improvement on.

Mind (Cognitive & Mental Performance)

Primary Focus: The Mind domain is devoted to cognitive longevity and mental well-being. It encompasses keeping your brain **sharp**, your mind **engaged and resilient**, and your mental state **positive and focused**. We combine brain training, lifelong learning, psychological health, and even purpose/meaning. A high-performance longevity plan (like Peter Attia's for his clients) doesn't ignore the brain – it trains it much like the body. This template will ensure Eden can help users improve memory, attention, processing speed, and stress management so they can thrive mentally even into old age.

Primary Goal(s)

- **Maintain/Improve Cognitive Function:** Strengthen key cognitive domains – memory (ability to learn and recall information), attention span and focus, processing speed, and executive functions (problem-solving, multi-tasking, decision making). The aim is to not just stave off cognitive decline, but actually enhance your current mental performance. For example, you may aim to remember names more easily, stay focused on deep work longer without distraction, and react quicker in cognitive tasks. In longevity terms, this builds *cognitive reserve* – essentially a brain that can handle age-related changes or even pathology (like Alzheimer's changes) longer before showing symptoms ³³. The ultimate goal is that even in later decades you retain independence and mental sharpness (e.g. handle your finances, learn new skills at 80, enjoy complex reading, etc.).

- **Build Cognitive Reserve & Neuroplasticity:** Encourage practices that enhance brain plasticity – the brain's ability to form new connections and compensate for injury or aging. This includes continuous learning and challenging the brain in new ways (learning a language, instrument, skill) to literally build new neural networks. Cognitive reserve built over a lifetime has been associated with lower dementia risk ³³. So, a goal is to keep learning and challenging the brain so it stays adaptable. Biologically, we aim to stimulate neurogenesis (growth of new neurons, especially in the hippocampus) and synaptogenesis (new connections), which are thought to be fostered by activities like exercise (from Heart domain), learning, and possibly certain diets and meditation.
- **Enhance Psychological Well-being & Stress Tolerance:** Ensure mental health is robust – meaning low chronic anxiety, manageable levels of stress, good emotional regulation, and a sense of purpose and happiness. A calm, positive mind isn't just about feeling good; it impacts longevity (chronic stress and depression are risk factors for disease). So goals include cultivating a generally positive outlook, resilience in the face of challenges, and healthy coping mechanisms. This might manifest as improved scores on mood questionnaires (if measured) or simply the subjective feeling of "I feel less stressed and more content daily." We also want to preserve social and emotional cognition – your ability to maintain relationships and social engagement, since those strongly correlate with cognitive health in aging ³⁴.
- **Prevent Cognitive Decline & Neurodegeneration:** This is a long-term goal – through mid-life interventions, reduce risk or delay onset of neurodegenerative diseases like Alzheimer's or Parkinson's. While no guarantee, a combination of the above (exercise, cognitive engagement, diet, sleep, socializing) is associated with significantly lower dementia incidence ³⁵ ³⁴. Markers would be maintaining excellent cognitive test scores as you age and avoiding mild cognitive impairment. More immediately, if you have any specific cognitive weaknesses (like trouble finding words, or mild attention issues), the goal is to strengthen those now. Essentially, we want you to have the memory and quick wit of someone much younger even as years go by.
- **Cultivate Continuous Learning & Purpose:** On a qualitative level, a goal is to integrate intellectual enrichment and purposeful activities into your life as a habit. This means you are regularly challenging your brain with new learning (classes, hobbies, reading) and have meaningful goals that keep you mentally engaged. Research in Blue Zones and among successful agers shows having a *purpose* (a "why" to get up in the morning) is crucial for longevity. So an often overlooked goal of a coach like Attia might be to help a client identify and pursue passions and intellectually stimulating projects. For you, it could mean something like *"learn Spanish in the next 2 years," "volunteer tutoring math," "write a blog," "play piano at the local senior center"* – anything that combines cognitive challenge with personal meaning.

Key Metrics

- **Cognitive Testing Scores:** We can use structured cognitive assessments to get baseline and track improvement. For memory, something like a **word recall test** (e.g. how many words out of a list of 15 you can remember after 10 minutes) could be done periodically. For processing speed, tests like **Digit Symbol Substitution** from the WAIS IQ test or simple reaction time (computer-based measure in milliseconds) can be tracked – faster times indicate improvement. For executive function, tests like **Trail Making Test Part B** (timed task connecting alternating letters/numbers) or a Stroop test can gauge mental flexibility and attention. If available, cognitive training apps (Lumosity, BrainHQ, Elevate) give composite scores for different domains – we can use those as metrics (e.g. working memory game score improving from 500 to 800 over 3 months). The idea is to quantify aspects of cognition: memory, attention, speed, executive function. *Goal metrics:* improvement or maintenance

of high percentile performance for age. For example, move from 50th percentile to 75th percentile in working memory for your age group through training.

- **Brain Training Progress:** If you engage in specific brain training exercises (like dual n-back, Sudoku difficulty levels, language learning progress), measure progress. E.g., **Dual N-Back level** you can handle (many start at 1-back and might progress to 2-back, 3-back with practice – higher is better for working memory). Or **crossword puzzle difficulty** – perhaps you progress from doing easy puzzles to completing New York Times Wednesday puzzles to Sunday puzzles over time. If learning a language, measure via apps (like Duolingo progress or vocab size). These proxies show your brain adapting and learning. The actual values (like “reached unit 5 in language course” or “can now do 7-digit backward span memory test”) can be motivating metrics.
- **Focus & Productivity Metrics:** These can be quantified by something like **Pomodoro count** or **deep work hours** per day. For instance, how many 25-minute focused sessions can you do in a day without distraction, or a subjective rating of distraction. We might use apps that track computer/ phone usage to quantify time spent focused vs. distracted. A simpler metric: how long can you read or work on a challenging task before losing focus? If initially it’s 20 minutes, maybe our goal is to extend that to 45–60 minutes through mindfulness and practice. Another metric: **Mindfulness/ attention scores** if you use a tool or even track your meditation (some apps give you “calm minutes” etc.). Improvement in these indicates enhanced attention control.
- **Stress & Mood Assessments:** For mental well-being, track via validated scales. For stress, the **Perceived Stress Scale (PSS)** – score ranges from 0–40; lower is better. If you start at 20, maybe aim to bring it down to <15. For mood, something like **Beck Anxiety Inventory (BAI)** or **Beck Depression Inventory (BDI)** if relevant – though if you’re not clinically anxious/depressed, perhaps a simpler mood scale in a journal (rate mood 1–10 each day). Improvement would be fewer days of self-rated “low mood” or anxiety. Another is **HRV** (already in Recovery metrics) which indirectly measures stress resilience – higher HRV can indicate improved stress handling.
- **Social & Cognitive Engagement:** Metrics here might be *number of meaningful social interactions per week* (since social engagement is tied to cognitive health ³⁴) – e.g. tracking that you meet friends or family or attend group activities 2x, 3x, etc., per week. Or *participation in cognitive hobbies*: e.g. are you consistently spending e.g. 4 hours a week on learning or mentally stimulating hobbies (we can log hours practiced of piano or pages read of a challenging book, etc.). If you reported feeling isolated or understimulated, we measure improvement by increased engagement – “attends weekly book club now” or “volunteers 1x week teaching coding to kids,” etc. Not everything needs a number, but we can check these off qualitatively.
- **Sleep & Energy for Mind:** Many metrics from Recovery also reflect cognitive readiness: for instance, if sleep quality improves (Recovery domain), you should see better cognitive performance – one could indirectly measure cognitive fatigue by an evening “mental energy” questionnaire (e.g., “how mentally tired did you feel at end of day, 1–5”). We’d want that to improve (feeling less mentally exhausted because you managed stress and breaks better).
- **Long-term Brain Health Metrics:** Though not routinely measured, if available, one could track things like **blood biomarkers for brain health** (e.g. homocysteine, BDNF levels if ever tested, Omega-3 index) or **Neuroimaging** if part of a study (like MRI measuring brain volume or cortical thickness – unlikely outside research). But since we likely won’t have MRIs, we use surrogates: cognitive tests, functional ability. Another long-term metric: **no significant cognitive decline over years** – for example, if doing an annual MOCA (Montreal Cognitive Assessment) or similar, staying in high 20s/30 is good. Or **delaying retirement age** / continuing intellectual work by choice can be a metric of success that you remained mentally sharp and engaged.

Protocols

- **Regular Cognitive Exercise (Brain Training):** Treat cognitive workouts like physical workouts. Schedule **brain-training sessions** ~3–5 times a week, 15-30 minutes each, to target specific cognitive skills. This can be done via brain-training apps or puzzles/games. For example:
- Use an app like **BrainHQ, Lumosity, or Elevate** which presents games for memory, speed, attention, etc., and adaptively gets harder. We'll focus on areas you want to improve (if memory is priority, more memory games; if processing speed, reaction time tasks, etc.). Track your scores and aim for gradual improvement or hitting "expert" levels on games ³⁶ ³⁷.
- Do traditional puzzles: crosswords for verbal fluency, Sudoku or chess puzzles for problem-solving, jigsaw puzzles for visual-spatial, etc. Increase the difficulty over time (harder Sudoku, larger jigsaws, crosswords from Monday to Saturday difficulty). The key is to reach a level that is challenging enough to make you think and even fail sometimes – **challenge is what drives neuroplasticity**.
- **Dual N-Back training:** If you're game, dual n-back is a renowned working memory training that some find improves fluid intelligence. You'd do ~20 minutes of dual n-back (there are free apps) 3x/week, trying to push to higher N levels. (Not mandatory, but an example of a structured brain exercise).
- **Memory techniques practice:** Learn memory techniques (like mnemonics, memory palaces) and practice by memorizing something weekly – e.g. a short poem, a list of foreign vocabulary, names of people you meet, etc. There's evidence that using these techniques not only improves the trained task but also overall memory strategy use.
- Over 6–12 weeks, you should see tangible improvements in the specific tasks (like you can now remember 7-8 digits reliably vs 5 before, or complete expert-level puzzles). Research including the ACTIVE study demonstrated that properly designed cognitive training can improve mental function and those gains can last years ³⁷. **Conservative minimum:** a couple of puzzle/game sessions a week plus learning new info periodically. **Stretch goal:** daily short sessions or multiple modalities (app games in morning, a puzzle at night, etc.) for a comprehensive brain workout routine.
- **Lifelong Learning Project:** Identify at least one **new skill or subject** to learn that genuinely excites you, and pursue it systematically. For instance:
- Learn a new **language** using apps (Duolingo, Babbel) and/or classes. Practice daily for 15 minutes and perhaps join a weekly language exchange or tutor session. Aim to reach a conversational level over the next year or two. Language learning engages memory, listening, and pattern recognition – great brain exercise (studies show it can even delay cognitive decline).
- Learn a **musical instrument** or revive one you played in the past. Take a weekly lesson or follow an online course, and practice regularly. Music training has wide-ranging brain benefits, enhancing auditory processing, memory, and coordination.
- Take up a **new hobby** that involves skill and thought – e.g. photography (learn the technical and artistic aspects), programming (there are courses for all levels), creative writing (maybe join NaNoWriMo – writing a novel challenge), or even something like learning chess if you haven't played before.
- The key is to be mentally stretching beyond your comfort zone. If you're professionally an expert in one field, dabble in a different domain for brain cross-training (e.g. an engineer learning a new language or a writer learning coding).
- We will set milestones for these projects (like complete an online course by X date, or be able to play Y song on guitar, or have a 5-minute conversation in Spanish). This gives a sense of achievement and purpose. It's the kind of thing a high-performance longevity coach would encourage because it gives you a *reason* to keep cognitively active, not just doing drills.

- **Mindfulness and Meditation:** Incorporate **mindfulness practices** to sharpen attention and improve mental resilience. Start with a small daily practice: e.g. 5–10 minutes of mindful breathing each morning or evening. You can use guided meditation apps (Headspace, Calm) or simply sit quietly focusing on your breath or body sensations. Mindfulness meditation has been shown to enhance attention, executive function, and even improve brain connectivity in older adults ³¹. It also reduces stress and anxiety levels ³². Over time, you could extend this to 20 minutes daily, or explore specific techniques like **Vipassana** or **Transcendental Meditation** if interested. If meditation isn't appealing, **mindful activities** like mindful walking, mindful eating (paying full attention to the experience of the activity) also build focus. We'll measure success by perhaps an increased capacity to sit in silence without feeling antsy, or improvements in your perceived concentration during the day. A *stretch goal* could be attending a weekend meditation retreat for immersive training (optional, for those really keen). At minimum, some form of regular mindfulness is strongly encouraged – it's like a gym for your brain's attention networks and emotional regulation circuits.
- **Reading and Intellectual Enrichment:** Make a habit of **reading quality material daily**, especially material that makes you think. It could be non-fiction on new topics, literature, or scientific articles (if that interests you). Aim to read, say, 20 pages a day or finish a certain number of books per month. Reading expands vocabulary, knowledge and is linked to cognitive longevity. We might set reading list goals (perhaps tackling classic novels or new subjects in non-fiction). You can also challenge your comprehension by summarizing or discussing what you read (maybe keep a journal or join a book club for social aspect). If reading isn't your thing, try **audiobooks or educational podcasts** – they still stimulate the brain (just ensure you reflect on them, not just passively hear). The measure is that you're consistently exposing your brain to new information and ideas, which forms new neural connections.
- **Social Engagement & Hobbies:** Ensure you have **regular social and mentally stimulating interactions**. This might involve joining clubs or groups aligned with your interests – e.g. a weekly **board game night** (board games can improve strategy and processing speed), a **book club** (memory and discussion of themes exercise brain and social cognition), a **class** (like a history class at community college or an online course cohort). Social interaction itself is a cognitive workout – you have to pay attention, recall facts, articulate thoughts. Research indicates social isolation increases dementia risk ³⁴, so an explicit part of your protocol is to schedule social time. If currently you're isolated, Eden might suggest volunteering (teaching, community service) – which provides social contact and a sense of purpose. Even simply ensuring you have a deep conversation with a friend or family member every few days can help. We'll align it with your personality – if you're extroverted, maybe lots of group activities; if introverted, a few close interactions or online communities of interest might do. **Stretch goal:** combining social with mental exercise, e.g. join a weekly **debate group, trivia team, or language conversation meetup** where you both socialize and use your brain.
- **Brain-Healthy Diet:** Support cognitive health through nutrition (ties with Metabolism domain but some specifics for brain). Ensure plenty of **omega-3 fatty acids** (DHA/EPA) – critical for brain cell membranes. This could mean fatty fish 2x/week (salmon, sardines) or a fish oil supplement ~1000–2000 mg DHA+EPA daily ¹¹. **Antioxidant-rich fruits and veggies** (berries, leafy greens, turmeric, etc.) help reduce oxidative stress in the brain. The **MIND diet** (hybrid of Mediterranean and DASH focusing on brain foods) is a great template – it's been associated with slower cognitive decline ³⁸. It emphasizes greens, berries, olive oil, nuts, whole grains, fish, and limits red meat, butter, cheese, sweets. We'll incorporate some of those guidelines. Ensure **B vitamins** are adequate (folate, B6, B12) as they're important for cognition and keeping homocysteine in check (high homocysteine is linked to cognitive decline). If you have a dietary shortfall, perhaps a B-complex or at least B12 if you're

vegetarian. Also, **stay hydrated** – even mild dehydration can impair concentration. The goal is a diet that fuels the brain: stable energy (to avoid brain fog from sugar spikes/crashes) and plenty of micronutrients for long-term brain health.

- **Creative Pursuits:** Encourage an outlet that engages **creativity**, which is a different aspect of cognition (involving divergent thinking). This might be writing (journaling daily or creative writing), drawing/painting, crafting, or music composition. Creativity often uses parts of the brain that logical tasks don't, and can strengthen neural connections. For example, start a habit of free-writing for 10 minutes each morning (just pen to paper, stream of consciousness) – it's been shown to boost creativity and reduce mental blocks. Or if you enjoy art, maybe take a painting class or follow online tutorials. The point isn't to become an artist per se, but to challenge the brain in non-linear ways and also provide stress relief and joy (which feeds back into better cognitive function). Many high-performers use creative hobbies to balance their analytical work – it's like cross-training for the mind.
- **Purpose and Mental Outlook:** Work on the higher-level mental aspect: your sense of purpose and maintaining a positive outlook. This might not sound like a "protocol," but it can be approached systematically:
- Write a **personal mission statement or list of values/goals** that give you purpose. Reflect on what drives you or what legacy you want. This can be revisited periodically to guide life choices (ensuring you're engaged in meaningful activities).
- Practice **gratitude** – e.g. write down 3 things you're grateful for each day or each week. Gratitude practices have been linked to better mental health and even physical health.
- Engage in **community or spiritual practices** if those are part of your values (church, meditation group, volunteering). They often provide a sense of meaning and context bigger than oneself, which is protective for mental health.
- If you're scientifically inclined, one could measure life satisfaction via questionnaires, but qualitatively, we want you to feel your days are meaningful. We will set *mini-goals* like "find a volunteering role by next month" or "spend an hour this week on a hobby project I care about," to ensure purpose isn't neglected.
- If negative thoughts or chronic anxiety are issues, Eden might incorporate a **Cognitive Behavioral Therapy (CBT) technique** or journaling exercise to challenge and reframe negative thoughts. Over time, building a habit of reframing negativity into problem-solving or acceptance can improve mental resilience. For example, using a thought log: when a negative thought arises, write it and then write alternative interpretations. This is mental training for emotional regulation.
- **Nootropics & Cognitive Supplements (Optional):** If interested, certain supplements may support cognitive function:
- **Fish Oil (DHA/EPA):** As mentioned, crucial for brain – if not getting through diet, supplementing ~1g/day DHA/EPA combined could support brain structure and function.
- **Creatine:** Surprisingly, creatine isn't just for muscles; it also can improve cognitive performance, especially in vegetarians or during sleep deprivation, by providing quick phosphate energy to brain cells. A low dose (3–5g/day) is sometimes used to support memory and intelligence tasks.
- **Caffeine + L-Theanine:** A classic combo – caffeine for alertness, L-Theanine (100–200 mg) to smooth jitteriness – can acutely boost focus and attention. Use judiciously (and not too late in day; see Recovery).
- **Bacopa Monnieri:** An herb used in Ayurvedic medicine, some evidence suggests it can improve memory after chronic use (requires 8–12 weeks supplementation).
- **Lion's Mane Mushroom:** Some find this medicinal mushroom (in tea or capsules) supports cognitive function and nerve growth factor – evidence is preliminary but it's a popular nootropic for memory and mood.

- **Multivitamin or specific nutrients:** Ensure Vitamin D is adequate (for mood and brain health), B12 especially if you're older or on a plant-based diet, and iron levels (low iron causes brain fog).
- These are *optional boosters*. The main “nootropic stack” we rely on is still: exercise ³⁵, sleep, learning, and social engagement, which have far more evidence. However, Eden can help you experiment with safe supplements if you're keen, monitoring effects (e.g. try Bacopa for 3 months to see if you notice memory improvement in training scores).
- **Cross-Domain Synergy:** Remember that improvements in other domains will feed into Mind. We will coordinate:
 - Regular aerobic exercise (Heart domain) is shown to increase hippocampal volume and reduce dementia risk ³⁵ – so Eden will remind you that your cardio sessions are also brain sessions.
 - Strength training (Frame) has been linked to better cognitive function and lower Alzheimer's risk ³⁹, so by getting stronger you're also helping your brain.
 - Good sleep and low stress (Recovery) are fundamental to concentration and memory – we'll use your sleep/stress improvements as a lever. For example, after a great night's sleep, maybe attempt a harder brain puzzle and notice the difference.
 - A key protocol is to occasionally *reflect* on these synergies – e.g., journal on how a workout made your mind feel, or how a focused mind helps you stick to diet, etc. This integrative awareness can reinforce adherence across domains.
- **Periodic Cognitive Assessments:** Every 6–12 months, do a formal check-in on cognitive metrics (could be re-taking a short cognitive test battery or seeing if your dual n-back or brain game scores improved, or even a MOCA test if appropriate). If any decline is noted, we adjust protocols (maybe increase cognitive challenges or investigate further medically). But we expect maintenance or improvement. This mirrors how a proactive physician might track a patient's cognition over time to catch issues early. Early detection of any slippage means we can intensify efforts or add new strategies (like more social engagement or novel activities) to course-correct.

Customization Questions

- **Current Cognitive Concerns:** Do you currently notice any issues with your memory, focus, or other cognitive abilities that concern you? (e.g., “I keep forgetting names,” “I lose my train of thought often,” “It's hard to concentrate at work for long,” “I feel mentally slower than I used to.”) Understanding if there's a pain point will let Eden target that specifically. Alternatively, you might feel you're generally fine cognitively – then we focus on enhancement from a good baseline.
- **Learning Interests:** What topics, skills, or languages have you always been interested in but haven't pursued yet? (Maybe you've said “someday I'll learn to play piano” or “I wish I knew more about astronomy” etc.) Similarly, what activities have you done in the past that you found mentally engaging or rewarding? This will help pick a **learning project** that genuinely excites you – motivation is crucial for sustained mental effort. Also, do you prefer structured learning (classes, courses) or self-learning (books, videos)? We'll choose format accordingly.
- **Hobbies and Creative Activities:** Do you currently have hobbies that challenge your mind or creativity (like playing an instrument, writing, puzzles, games, etc.)? If yes, how often do you engage in them? If no, is there something you think you'd enjoy if you had time (painting, coding, playing chess, etc.)? We'd like to either deepen your existing mentally stimulating hobbies or introduce new ones that fit your personality. For instance, if you love games, maybe we incorporate a regular schedule for chess or strategic games online.
- **Social Life & Isolation:** How often do you engage socially each week, and in what context? (Work doesn't count unless it's social; we mean outside of required interactions: e.g. meeting friends, group activities, phone calls with family, community events.) Do you feel lonely or isolated at times? Social

engagement is a huge factor in brain health ³⁴ , so if you're low on it, Eden will prioritize getting you connected (maybe joining clubs or volunteer groups related to your interests). If you already have a rich social life, we'll consider how to maintain it and possibly integrate cognitive elements (like attending lectures with friends, etc.). Also, gauge the quality of social interactions – deep meaningful chats vs. superficial; the former are more protective for well-being.

- **Stress & Mental Health:** We asked in Recovery about stress; here specifically: do you struggle with anxiety, depression, or other mental health issues that impact your cognition (e.g. anxiety making it hard to concentrate, or low mood sapping motivation)? If you have a history of such conditions, or currently see a therapist or take medications, let Eden know so we can coordinate and not conflict with any treatment. For example, if you have clinical anxiety, more mindfulness and perhaps CBT techniques in the plan might be emphasized. If mood is low, focusing on engaging, pleasurable cognitive activities and social support is key (as well as maybe suggesting you seek professional therapy if not already).
- **Meditation/Spiritual Practice:** Have you tried meditation or mindfulness before? If so, what kind (guided app, yoga, religious prayer, etc.) and did it help? Some people take to it easily, others find it frustrating. If you hate sitting still, we might try moving meditation like tai chi or qigong, or focus on active mindfulness (like mindful running). If you already meditate, we'll build on that (maybe challenge you with a longer session or different technique). Similarly, if you have a spiritual practice (prayer, etc.) do you find it gives you peace/focus? That can be part of the Mind protocol as well.
- **Cognitive Tools and Tech:** Are you open to using apps or technology for cognitive training and monitoring? For instance, would you do Lumosity or BrainHQ exercises on your phone? Would you wear a Muse headband for meditation feedback or a heart rate monitor for biofeedback? If you're tech-savvy and interested, we can incorporate these gamified elements. If you prefer low-tech (books, physical puzzles), that's fine too. Let us know your preference and what devices you have (smartphone, computer, any VR maybe?) – VR isn't required but interestingly, VR cognitive games exist if you happen to have an Oculus or such.
- **Lifestyle and Cognitive Load:** What is your occupation and does it already provide cognitive stimulation? (E.g., if you're a software engineer or a professor, you might already be mentally taxed by work, so our approach may be more on relaxation and different types of mental use like creativity; if your job is very physical or routine and not mentally stimulating, we'll emphasize more brain challenges outside work.) Also, how much leisure time do you realistically have to devote to these activities? If you're extremely busy, we'll find small pockets (like brain training on your commute via app, etc.). If you have more free time (e.g. retired or lighter schedule), we might fill it with structured classes or projects.
- **Memory Strategies & Day-to-Day Cognitive Tasks:** Do you use any memory or organization techniques currently (like to-do lists, calendars, mnemonic tricks)? And do you feel you manage those well? If memory in daily life is an issue (like forgetting appointments or tasks), Eden can incorporate strategy coaching – for instance, teaching you to use spaced repetition for learning or chunking for remembering numbers, or even recommending digital tools (note-taking systems, reminder apps) to augment your memory. Knowing your daily pain points (e.g. "I can't remember names" or "I walk into a room and forget why") will let us tackle those specifically with techniques or habit changes.
- **Goals and Passions:** Ultimately, what do you want your mind for? Perhaps share if you have any long-term mental ambitions: *"I want to write a book," "I want to get a master's degree at 60," "I want to stay sharp to play strategy games with my grandkids," "I'm passionate about lifelong learning in history/science/art."* We can tailor the protocol around facilitating those passions – making sure your daily practices align with those outcomes. For example, if writing a book is a goal, the protocol can include a writing schedule and creative writing exercises (combining Mind and purpose). If simply staying

cognitively intact is the goal (avoid Alzheimer's that a parent had), then we emphasize broad prevention strategies and measure success in retention of abilities.

- **Mind-Body Interactions:** Do you notice cognitive effects from other areas of your life? For instance, "When I exercise I think more clearly," or "When I eat a lot of sugar I feel foggy," or "If I don't sleep, I can't focus." These insights will help reinforce certain changes – e.g. if you know sugar makes you foggy, we'll definitely try to reduce sugar (and you'll be more motivated as you see the difference). Or if you haven't noticed these, Eden might ask you to observe and report back – building your awareness that the domains interconnect (so you value all aspects of the protocol).
- **Monitoring Comfort:** Are you interested in tracking cognitive improvement formally (through tests or apps) and seeing data, or would you prefer a more informal sense of "I feel sharper"? Some folks love numbers and will be motivated by seeing Lumosity scores graph up, others might get discouraged if they don't see a quick change. Let us know your style so we can either incorporate quantifiable feedback or keep it qualitative and encouraging. Also, if we did periodic cognitive tests (like MOCA annually), would that appeal to you or stress you? We can adjust accordingly.

Each domain's template above is designed to be practical and evidence-based, giving Eden a strong default plan that can be tailored to individual needs and circumstances. By combining conservative minimum practices (the basics that everyone should do) with stretch goals (the optimal practices for those willing and able), we ensure flexibility. Eden will use these templates to coach users like a high-performance longevity specialist – systematically, empathetically, and backed by scientific rationale ^{13 35}.

^{1 2 3 4 5 6 8 17 21 22 24 25 30 35} The Connection Between Zone 2 Training and Longevity – omre US

[https://omre.co/blogs/news/connection-between-zone-2-training-and-longevity?](https://omre.co/blogs/news/connection-between-zone-2-training-and-longevity?srltid=AfmBOooHgsnyxjOzuIqgxTSPH3XUg3_8au-SvhLOWhvhLhIpr8vhdTIBV)
[srltid=AfmBOooHgsnyxjOzuIqgxTSPH3XUg3_8au-SvhLOWhvhLhIpr8vhdTIBV](https://omre.co/blogs/news/connection-between-zone-2-training-and-longevity?srltid=AfmBOooHgsnyxjOzuIqgxTSPH3XUg3_8au-SvhLOWhvhLhIpr8vhdTIBV)

⁷ Effect of aerobic exercise on blood pressure: a meta ... - PubMed - NIH
<https://pubmed.ncbi.nlm.nih.gov/11926784/>

⁹ Maximizing Cardiovascular Fitness at Any Age - Grand Union BJJ
<https://www.grandunionbjj.com/blogs/news/maximizing-cardiovascular-fitness-at-any-age-a-comprehensive-guide-for-bjj>

¹⁰ Mediterranean diet and metabolic syndrome: the evidence | Public Health Nutrition | Cambridge Core
<https://www.cambridge.org/core/journals/public-health-nutrition/article/mediterranean-diet-and-metabolic-syndrome-the-evidence/F607EFDDBA7FA4BAB704F0CAE7DF7C66>

¹¹ Association Between Omega-3 Fatty Acid Intake and Dyslipidemia
<https://www.ahajournals.org/doi/10.1161/JAHA.123.029512>

^{12 13 14 18 26 39} Why Muscle Mass Matters and How to Keep It
<https://www.massgeneral.org/news/article/why-muscle-mass-matters-and-how-to-keep-it>

^{15 16} Home - Peter Attia
<https://peterattiamd.com/>

¹⁹ Meta-Analysis Examining the Importance of Creatine Ingestion ...
<https://www.mdpi.com/2072-6643/13/6/1912>

²⁰ Does Insufficient Sleep Increase the Risk of Developing Insulin Resistance: A Systematic Review - PMC
<https://pmc.ncbi.nlm.nih.gov/articles/PMC9036496/>

23 Early Time-Restricted Feeding Improves Insulin Sensitivity, Blood ...

<https://pubmed.ncbi.nlm.nih.gov/29754952/>

27 Walking after a meal helps keep blood sugar in check | UCLA Health

<https://www.uclahealth.org/news/article/walking-after-meal-helps-keep-blood-sugar-check>

28 The Effect of Berberine on Metabolic Profiles in Type 2 Diabetic ...

<https://pubmed.ncbi.nlm.nih.gov/34956436/>

29 Frontiers | Association of Sleep Duration With All-Cause and Cardiovascular Mortality: A Prospective Cohort Study

<https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2022.880276/full>

31 Frontiers | Mindfulness Training Improves Cognition and Strengthens Intrinsic Connectivity Between the Hippocampus and Posteromedial Cortex in Healthy Older Adults

<https://www.frontiersin.org/journals/aging-neuroscience/articles/10.3389/fnagi.2021.702796/full>

32 Effects of Ashwagandha (*Withania Somnifera*) on stress and anxiety

<https://www.sciencedirect.com/science/article/abs/pii/S1550830724001691>

33 Cognitive reserve over the life course and risk of dementia - NIH

<https://pmc.ncbi.nlm.nih.gov/articles/PMC11047126/>

34 How isolation affects memory and thinking skills - Harvard Health

<https://www.health.harvard.edu/mind-and-mood/how-isolation-affects-memory-and-thinking-skills>

36 37 Cognitive Training Boosts Daily Living Skills in Healthy Seniors Older Adults - Fisher Center for Alzheimer's Research Foundation

<https://www.alzinfo.org/articles/prevention-and-wellness-73/>

38 Diet Review: MIND Diet - The Nutrition Source

<https://nutritionsource.hsph.harvard.edu/healthy-weight/diet-reviews/mind-diet/>