

Body Composition Fundamentals — Workbook

This workbook accompanies each module of Body Composition Fundamentals and turns concepts into concrete personal data. Complete each section alongside its corresponding course module — the exercises, worksheets, and checklists are designed to generate your personalised baseline, change protocol, and critical-evaluation toolkit. Every number you record here becomes the raw material for decisions you will make over the next 12 weeks.

What Body Composition Actually Means

Anchor the vocabulary and establish your first set of baseline metrics before making any changes to your training or nutrition.

Exercise: Your Body-Composition Snapshot

Before consulting any goal-based targets, take your own measurements in a completely neutral, non-evaluative mindset. This is data collection, not judgement. Use the prompts below to record your current state and reflect on what you actually know — versus what you have assumed — about your body composition.

- Record your morning body weight (average of 3 consecutive days, post-void, fasted): _____. What is your waist circumference (midpoint method, 3-reading average)? _____. Calculate your waist-to-height ratio (waist ÷ height in the same units): _____. Is this above or below 0.5?

- What assumptions have you been making about your body composition based on scale weight alone? Name at least two things you thought you knew that this module caused you to question.

- Describe what a genuinely health-centred body-composition goal looks like for you — one framed around a functional or metabolic outcome rather than a clothing size or aesthetic ideal.

- If your waist-to-height ratio is above 0.5, what is the single most evidence-supported lifestyle change — from this module — that would reduce visceral fat specifically?

Worksheet: Baseline Metrics Log

Fill in every field at your baseline (Week 0) and return to this worksheet at weeks 4, 8, and 12. Use the same time of day, conditions, and equipment each time.

Date of measurement

Time of measurement

Morning body weight Day 1 (kg)

Morning body weight Day 2 (kg)

Morning body weight Day 3 (kg)

3-day average body weight (kg)

Waist circumference reading 1 (cm)

Waist circumference reading 2 (cm)

Waist circumference reading 3 (cm)

Average waist circumference (cm)

Hip circumference (cm)

Waist-to-height ratio

Waist-to-hip ratio

Body fat % method used

Body fat % result

Estimated lean mass (kg) = weight × (1 - BF%/100)

Notes on measurement conditions (hydration, sleep, recent exercise)

Checklist: Module 1 Readiness Checklist

- I can define fat mass, lean mass, and visceral fat in my own words
- I have measured my waist circumference using the midpoint method at least twice and averaged the readings
- I have calculated my waist-to-height ratio
- I understand why BMI alone is insufficient for individual body-composition assessment
- I have written at least one health-centred body-composition goal (non-aesthetic)
- I have identified my most significant source of measurement noise (hydration, menstrual cycle, etc.) and know how to control for it

Measuring Body Composition — Tools, Accuracy, and Tradeoffs

Select the measurement method(s) most appropriate to your context, apply them correctly, and begin building the habit of consistent, comparable measurements.

Exercise: Measurement Method Evaluation

Use the comparison framework from Module 2 to choose the measurement toolkit you will use throughout your 12-week protocol. There is no universally correct answer — this is a tradeoffs analysis based on your access, budget, and goals.

- List the measurement methods available to you locally (DEXA clinic within 30 km, a qualified skinfold practitioner, a BIA scale at home or gym, a tape measure). What is the cost and accessibility of each?

- Given your available methods, which combination gives you the best balance of accuracy and consistency? Justify your choice by referencing the error margins discussed in the lesson.

- Describe the exact standardised conditions you will use every time you take a BIA or skinfold measurement. Be specific about time of day, food and drink timing, exercise restrictions, and clothing.

- If you have access to DEXA, at which two points in your 12-week protocol would a scan provide the most useful data, and why those points rather than others?

Worksheet: Measurement Method Comparison

Complete this table to document your selected measurement tools and their limitations. Refer back to it whenever you interpret results.

Measurement method 1 (primary)

Error margin of method 1 ($\pm\%$)

Cost per test (\$)

How often you will use method 1

Measurement method 2 (secondary or cross-check)

Error margin of method 2 ($\pm\%$)

Cost per test (\$)

How often you will use method 2

Standardised testing conditions (time, fasted hours, exercise restriction)

Name/location of practitioner or device

Date of first measurement

Date of second measurement (planned)

Date of third measurement (planned)

Known confounders that could distort your readings (e.g., menstrual phase, travel)

Checklist: Measurement Quality Checklist

- I have selected at least two complementary measurement methods with documented error margins
- I have written down my standardised testing conditions and stored them where I will see them before each measurement
- I understand the difference between a single measurement and a trend — and I am committed to 4-week intervals, not weekly body-fat readings
- I know the specific conditions (menstrual phase, prior-day carbohydrate intake, hydration) that would make my measurement unreliable and I will reschedule rather than measure under those conditions
- I have booked or scheduled my first DEXA or skinfold appointment if applicable
- I can explain the 7-day rolling average method and have identified an app or spreadsheet to implement it

The Science of Changing Body Composition

Calculate your personal energy and protein targets, design your resistance training structure, and understand the physiological levers that will drive your results.

Exercise: Calculating Your Personal Targets

Work through the Mifflin-St Jeor equation and TDEE multiplication to derive your own energy and protein targets. Show your working — this builds intuition for how much these numbers move when inputs change.

- Calculate your BMR using the Mifflin-St Jeor equation. Show each step: $10 \times \text{weight}(\text{kg}) = ____$, $+ 6.25 \times \text{height}(\text{cm}) = ____$, $- 5 \times \text{age} = ____$, $+ 5$ (male) or -161 (female) = BMR of $____ \text{ kcal/day}$.
- Select your TDEE activity multiplier and justify it honestly. Multiply your BMR by that factor to get your TDEE. Then calculate your phase-appropriate target: deficit (TDEE - 300 to -500), maintenance, or surplus (TDEE + 200 to +300).
- Calculate your protein target using both 1.6 g/kg and 2.2 g/kg to establish a range. Divide your target protein grams by 4 (your planned meal count) to get a per-meal target. Does this feel achievable with your current diet? What one meal would you restructure first?
- Design a 3-day sample meal structure (breakfast, lunch, dinner, optional snack) that hits your protein range within your energy target. You do not need precise recipes — just protein source and estimated grams per meal.

Worksheet: Energy and Protein Target Calculator

Complete all input cells and derive your personal targets. The grey totals column is for you to fill — do not pre-calculate, as these depend on your unique inputs.

Body weight (kg)

Height (cm)

Age (years)

Sex (for BMR equation adjustment)

BMR result (kcal/day)

TDEE activity multiplier selected

TDEE result (kcal/day)

Goal (fat loss / maintenance / lean gain)

Daily calorie target (kcal/day)

Protein target at 1.6 g/kg (g/day)

Protein target at 2.2 g/kg (g/day)

Selected protein target (g/day)

Protein per meal (target g ÷ meal count)

Carbohydrate target (remaining kcal after protein + fat, at 4 kcal/g)

Fat target (minimum 0.8 g/kg for hormonal health; remainder flexible)

Weekly training sessions planned

Estimated exercise energy expenditure per session (kcal)

Will you adjust TDEE target on training vs. rest days? (yes/no)

Checklist: Training and Nutrition Setup Checklist

- I have calculated my BMR and TDEE using the Mifflin-St Jeor equation
- I have set a daily calorie target appropriate to my goal with a deficit no larger than 500 kcal/day
- I have set a protein target within the 1.6–2.2 g/kg range and distributed it across 3–4 meals
- I have a plan to track food intake for at least the first 4 weeks (app, food scale, or structured meal plan)
- I have scheduled at least 3 resistance training sessions per week covering squat, hinge, push, pull, and core patterns
- I understand the concept of progressive overload and I will record sets, reps, and loads each session
- I understand adaptive thermogenesis and I have planned my first diet break at weeks 7–8 if I am in a deficit

Navigating Diet Culture and Building a Sustainable Protocol

Apply an evidence-quality filter to claims you encounter, build your 12-week protocol document, and establish exit criteria so you know when and how to adjust.

Exercise: Claim Audit — Evaluating Five Body-Composition Claims

Select five body-composition claims you have personally encountered — from social media, a product label, a coach, a podcast, or a book. For each, apply the evidence hierarchy and red-flag checklist from Module 4, Lesson 1.

- List the five claims and their source. For each claim, identify what evidence tier the source is drawing from (anecdote, mechanistic, RCT, meta-analysis). Are any red flags present (industry funding, impossible rate, irrelevant citation)?

- For the two claims that survived your initial filter, search for the study behind them. Does the study population match you? Is the outcome measured the one being claimed? What is the effect size — is it clinically meaningful or statistically significant but trivially small?

- Which of the five claims are you now less confident in than before taking this course? What changed in your reasoning process?

Worksheet: 12-Week Body Composition Protocol Plan

Complete this protocol plan before beginning Week 1. It is a binding commitment to yourself — treat it as a contract. Include decision rules so you can respond to data without second-guessing.

Protocol start date

Protocol end date (12 weeks later)

Primary goal (fat loss / lean gain / recomposition)

Target rate of change (% body weight per week)

Daily calorie target (kcal)

Daily protein target (g)

Resistance training days per week

Training split (full body / upper-lower / PPL)

Primary measurement method and schedule

Secondary measurement method and schedule

4-week check-in dates (Weeks 4, 8, 12)

Decision rule: if scale average drops faster than target rate, I will...

Decision rule: if scale average is unchanged after 3 weeks, I will...

Decision rule: if lean mass drops more than 1 kg at a 4-week check-in, I will...

Planned diet break (dates and target maintenance calories)

Success criteria for Week 12 (specific, measurable — 2-3 metrics)

Next steps after Week 12 (continuation / reverse diet / new goal)

Checklist: Course Completion Checklist

- I have a completed Baseline Metrics Log with all measurements filled in
- I have a completed Energy and Protein Target Calculator with my personal targets
- I have a completed 12-Week Protocol Plan with written decision rules
- I can distinguish the evidence quality of a meta-analysis vs. an anecdote or mechanistic study
- I have identified and evaluated at least five body-composition claims using the evidence hierarchy
- I understand that diet culture conflates aesthetics with health and I have at least one non-aesthetic goal
- I know the difference between adaptive thermogenesis and permanent metabolic damage
- I have scheduled my 4-week check-in dates in my calendar
- I understand that recomposition is achievable for beginners at maintenance calories with adequate protein and resistance training
- I know what creatine monohydrate does and does not do, and I have made an informed decision about whether to include it

Your Action Plan

1. Take your baseline measurements today (morning weight × 3 days, waist circumference × 3 readings, calculate WtHR) and record in the Baseline Metrics Log
2. Calculate your BMR using the Mifflin-St Jeor equation and derive your TDEE and phase-appropriate calorie target
3. Set your protein target (1.6–2.2 g/kg/day) and plan a meal structure that distributes protein across 3–4 feedings
4. Select your measurement method combination, document your standardised conditions, and schedule measurements at weeks 0, 4, 8, and 12
5. Design or adopt a 3-day-per-week full-body resistance training program covering squat, hinge, push, pull, and core — record sets, reps, and loads from day one
6. Begin tracking food intake with a food scale and a tracking app (Cronometer, MacroFactor, or MyFitnessPal) for the first 4 weeks to calibrate intuition
7. Start a 7-day rolling average weight log using Happy Scale or a simple spreadsheet — commit to daily weigh-ins under consistent conditions
8. Complete the Claim Audit exercise on five body-composition claims you have previously accepted, and update your beliefs based on evidence quality
9. Complete the 12-Week Protocol Plan worksheet with written decision rules before beginning your first training week
10. Book a DEXA scan at weeks 0 and 12 if budget allows, or arrange a 7-site skinfold assessment with a qualified practitioner at your nearest sports medicine clinic or university fitness lab

