

NAD+ Comprehensive Dosing Guide (500 mg & 1000 mg Specifications)

I. Overview

NAD+ (Nicotinamide Adenine Dinucleotide) is a key co-enzyme involved in cellular energy metabolism, DNA repair and mitochondrial function[1]. High-dose intravenous infusion is predominantly used in clinical studies, while lower-dose subcutaneous administration has become a practical maintenance route[2][3]. This educational document describes a once-daily subcutaneous-injection protocol with gradual dose titration to improve tolerability. This guideline covers dosing protocols for 500 mg and 1000 mg vial specifications.

Research Background: Refer to relevant NAD+ peptide reviews for evidence regarding mechanism of action, human and pre-clinical studies, limitations and safety.

II. Dosing & Reconstitution Guidelines

500 mg Specification

Reconstitution: Add 3.0 mL bacteriostatic water → concentration 166.7 mg/mL

U-100 insulin syringe conversion: 1 unit = 0.01 mL = 1.67 mg

Shelf-life after reconstitution: Stable for approximately 14 days under refrigeration (2-8°C)[7]; protect from light and avoid freeze-thaw cycles

1000 mg Specification

Reconstitution: Add 3.0 mL bacteriostatic water → concentration 333.3 mg/mL

U-100 insulin syringe conversion: 1 unit = 0.01 mL = 3.33 mg

Shelf-life after reconstitution: Stable for approximately 14 days under refrigeration (2-8°C)[7]; protect from light and avoid freeze-thaw cycles

Standard / Progressive Titration Protocol (Once- Daily, Subcutaneous Injection)

The identical dosing protocol applies to all specifications; injection volumes (syringe units) differ due to varying concentrations.

Weeks	Daily Dose (mg)	500mg Specification (166.7 mg/mL)	1000mg Specification (333.3 mg/mL)
Week 1	50 mg	30 units (0.30 mL)	15 units (0.15 mL)
Week 2	75 mg	45 units (0.45 mL)	22.5 units (0.225 mL)
Weeks 3-8	100 mg	60 units (0.60 mL)	30 units (0.30 mL)
Weeks 9-12	100 mg	60 units (0.60 mL)	30 units (0.30 mL)
Weeks 13-16	100 mg	60 units (0.60 mL)	30 units (0.30 mL)

Frequency: Once-daily subcutaneous injection.

Titration Recommendation: Start at 50 mg per day to assess tolerability, since excessively high starting doses may trigger adverse reactions such as insomnia, anxiety or fatigue[4]. Most individuals show satisfactory tolerability within the 50-100 mg daily range following gradual dose increases[5].

III. Reconstitution Procedure

1. Allow the lyophilized vial to reach room temperature before opening to minimize moisture condensation.
2. Draw 3.0 mL bacteriostatic water (containing 0.9% benzyl alcohol) with a sterile syringe.
3. Inject slowly along the inner vial wall to prevent foaming; do not inject directly onto the powder cake.
4. Gently swirl or roll the vial until powder dissolves completely. Do not shake vigorously.
5. The resulting solution shall be clear and colourless. Discard the solution if discoloration or precipitate appears.
6. Label with reconstitution date, store refrigerated at 2-8°C (35.6-46.4°F) and protected from light.
7. Use within 14 days; inspect solution clarity before each use.

IV. Required Supplies

500 mg Specification

Planning is based on an 8-16-week daily-dosing protocol with progressive adjustment as described above.

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It does not replace professional medical advice and is not for human consumption.

Peptide vials (NAD⁺, 500 mg per vial):

8 weeks $\approx$ 11 vials (total consumption 5,075 mg)

12 weeks $\approx$ 16 vials (total consumption 7,875 mg)

16 weeks $\approx$ 22 vials (total consumption 10,675 mg)

Insulin syringes (U-100, 1 mL):

Weekly: 7 syringes (1 per day)

8 weeks: 56 syringes

12 weeks: 84 syringes

16 weeks: 112 syringes

Bacteriostatic water (10 mL vials): 3.0 mL required per vial for reconstitution.

8 weeks (11 vials): 33 mL $\rightarrow$ 4 $\times$ 10 mL vials

12 weeks (16 vials): 48 mL $\rightarrow$ 5 $\times$ 10 mL vials

16 weeks (22 vials): 66 mL $\rightarrow$ 7 $\times$ 10 mL vials

Alcohol swabs: One swab for vial stopper and one for injection site each day.

Weekly: 14 swabs (2 per day)

8 weeks: 112 swabs $\rightarrow$ recommended: 2 boxes $\times$ 100-count

12 weeks: 168 swabs $\rightarrow$ recommended: 2 boxes $\times$ 100-count

16 weeks: 224 swabs $\rightarrow$ recommended: 3 boxes $\times$ 100-count

1000 mg Specification

Planning is based on an 8-16-week daily-dosing protocol with progressive adjustment as described above.

Peptide vials (NAD⁺, 1000 mg per vial):

8 weeks $\approx$ 6 vials (total consumption 5,075 mg)

12 weeks $\approx$ 8 vials (total consumption 7,875 mg)

16 weeks $\approx$ 11 vials (total consumption 10,675 mg)

Insulin syringes (U-100, 1 mL):

Weekly: 7 syringes (1 per day)

8 weeks: 56 syringes

12 weeks: 84 syringes

16 weeks: 112 syringes

Bacteriostatic water (10 mL vials): 3.0 mL required per vial for reconstitution.

8 weeks (6 vials): 18 mL $\rightarrow$ 2 $\times$ 10 mL vials

12 weeks (8 vials): 24 mL $\rightarrow$ 3 $\times$ 10 mL vials

16 weeks (11 vials): 33 mL $\rightarrow$ 4 $\times$ 10 mL vials

Alcohol swabs: One swab for vial stopper and one for injection site each day.

Weekly: 14 swabs (2 per day)

8 weeks: 112 swabs $\rightarrow$ recommended: 2 boxes $\times$ 100-count

12 weeks: 168 swabs $\rightarrow$ recommended: 2 boxes $\times$ 100-count

16 weeks: 224 swabs $\rightarrow$ recommended: 3 boxes $\times$ 100-count

V. Protocol Summary

Brief Summary:

Objective: Support cellular energy metabolism, DNA-repair pathways and mitochondrial function via exogenous NAD⁺ supplementation[1].

Timing: Daily subcutaneous injection for 8-16 weeks with gradual dose titration.

Dose Range: 50-100 mg daily; start from low dose of 50 mg and increase by approximately 25 mg per week subject to tolerability.

Reconstitution: Reconstitute vials of different specifications separately with 3.0 mL diluent to achieve precise measurable concentrations.

Storage: Lyophilized powder stored frozen at -20°C (-4°F); reconstituted solution refrigerated at $2-8^{\circ}\text{C}$ ($35.6-46.4^{\circ}\text{F}$), usable for 14 days; protect from light.

VI. Dosing Protocol

Starting Dose: 50 mg daily in Week 1 to assess individual tolerability.

Dose Escalation: Increase to 75 mg daily in Week 2; advance to 100 mg daily starting Week 3 if well tolerated[4][5].

Maintenance Dose: Sustained 100 mg daily from Week 3 to Week 16 (adjust according to individual response and tolerability).

Frequency: Once-daily subcutaneous injection.

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Injection Time: Maintain a fixed time each day; morning dosing is preferred by some users.

Site Rotation: Systematically rotate injection sites (abdomen, thighs, upper arms) to prevent local tissue irritation.

VII. Storage Instructions

Proper storage is critical for preserving NAD+ stability and potency.

Lyophilized Powder (Unopened): Store under dry, dark conditions at –20°C (–4°F) or lower (–80°C preferred for long-term storage)[6].

Minimize moisture exposure as NAD+ powder is hygroscopic.

Reconstituted Solution: Refrigerate at 2-8°C (35.6-46.4°F), use within approximately 14 days[7]. Protect from light; ultraviolet light degrades NAD+.

Avoid Freeze-Thaw Cycles: Do not repeatedly freeze and thaw reconstituted NAD+ solution; potency will be impaired.

Pre-use Inspection: Check solution clarity before each use. Fresh NAD+ solution shall be clear and colourless. Discard if discoloration, turbidity or precipitate occurs.

VIII. Important Considerations

Practical points for consistency, safety and optimal outcomes.

Use a new sterile insulin syringe for every injection; discard used needles into an approved sharps container.

Systematically rotate injection sites (abdomen at least 2-inches away from umbilicus, outer thighs, posterior upper arms) to reduce soreness and prevent lipohypertrophy.

Wipe vial stopper and injection-site skin with alcohol swab; allow skin to air-dry fully before injection.

Inject slowly over 5-10 seconds to minimize local tissue irritation; wait several seconds before withdrawing the needle.

Document daily dose, injection site and any observed effects to maintain consistency and track tolerability.

If persistent redness or induration appears at injection site, over-the-counter hydrocortisone cream may be applied and switch to alternative injection sites.

Start from low dose (50 mg) to evaluate individual tolerability prior to dose escalation[4].

IX. Potential Benefits & Adverse-Effect Profile

Observations compiled from pre-clinical models and human case reports.

Potential Benefits (as reported in literature)

May support cellular energy production and mitochondrial function by replenishing the NAD+ pool[1][8].

Human case reports and preliminary studies indicate cognitive-support and metabolic-health benefits within the 100-300mg daily dosage range[13].

High-dose intravenous regimens (500-1500 mg daily for roughly 10 days) have been used in open-label studies for substance-use disorders, with reported reduction in cravings and mood improvement during follow-up[2][9].

No serious adverse events were reported in published NAD+/NADH trials; adverse effects are generally mild[14].

Potential Adverse Effects

Rapid dose escalation may induce insomnia, anxiety or fatigue; gradual titration is recommended[4].

Mild local injection-site reactions (redness, pruritus, soreness) may occur with subcutaneous delivery; symptoms can usually be alleviated by site rotation.

Transient headache or flushing has been reported in some individuals; such effects are generally dose-dependent.

Daily doses above approximately 200-300 mg should generally be reserved for supervised therapeutic settings due to potential accumulation of metabolic by-products[15].

X. Injection Technique

General subcutaneous-injection guidance derived from CDC best-practice resources and clinical literature[16][17].

Preparation

Wash hands thoroughly with soap and water.

Wipe rubber vial stopper with alcohol swab and allow to air-dry.

Select injection site (abdomen minimum 2-inches from umbilicus, outer thigh or posterior upper arm), clean with alcohol swab; allow skin to dry completely before injection.

Needle Selection

Use fine short-gauge needles such as 28-31 G insulin syringes.

Needle length 5/16- to 1/2-inch (8-12 mm) is adequate to reach subcutaneous tissue for most adults[16].

Injection-volume range of this protocol (0.15-0.60 mL) is compatible with standard U-100, 1 mL insulin syringes.

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Injection Procedure

Pinch a skin fold between thumb and index finger to isolate subcutaneous tissue.

Insert needle at approximately 45° angle into the raised skin fold[16][17]. (Ultra-short 4 mm needles may be inserted at 90° without pinching skin; skin-pinch plus 45° insertion is recommended for typical 8-12 mm needles.)

Aspiration is not required for subcutaneous injection[16].

Deliver NAD+ solution slowly and steadily over 5-10 seconds; rapid injection raises risk of local irritation.

Wait several seconds after full delivery before withdrawing the needle at the identical insertion angle.

Apply gentle pressure with clean gauze or adhesive bandage; do not rub injection site.

Immediately dispose of used needle-syringe assembly into an approved sharps container.

Site Rotation

Systematically rotate injection sites to prevent soreness, lipohypertrophy or scar-tissue formation[18].

Alternate between left-right sides or different quadrants of the abdomen for daily injections.

The abdomen (at least 2-inches away from umbilicus) is a commonly preferred site for subcutaneous NAD+ injection due to favourable subcutaneous fat layer and generally lower sensitivity.

Outer thighs and posterior upper arms serve as alternative sites; select areas with sufficient subcutaneous adipose tissue.

Volume Considerations

NAD+ injection volumes within this protocol range from 0.15 mL (50 mg dose) to 0.60 mL (100 mg dose).

Subcutaneous tissue can comfortably accommodate approximately 1.5 mL per single injection; volumes used herein are well below this threshold[19].

For higher individual doses exceeding roughly 150 mg total, split into two separate injections at different sites to improve absorption and comfort.

Important Disclaimer: This document is for educational purposes only and does not constitute medical advice, diagnosis or treatment. NAD+ is intended for research- use only and is not for human consumption. Always consult a qualified healthcare professional before initiating any new supplement or investigational protocol. Individual responses may vary, and appropriate medical supervision is essential for safety- and- efficacy monitoring.