Supplements Simplified: what you need to know

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Goals for Today

What I hope you take with you

Myths

- “Natural” means safe
- More is better
- Supplements are necessary
- They’re proven effective
- Brand doesn’t matter
- If it’s on the shelf, it’s safe because the FDA tests/approves
- You don’t need to inform your healthcare team of supplement use

The Basics

Background

- **>70%** US adults report use (CRN, 2017 survey)
- Significant increase over time (CDC and CRN reports)
- Multi-**billion**-dollar industry
- Reasons for supplement use (CRN 2016 survey):
  - Overall health/wellness benefit
  - Get energy
  - Fill nutrient gaps in my diet

Definition

- "A dietary supplement is a product intended for ingestion that contains a 'dietary ingredient' intended to add further nutritional value to (**supplement**) the diet" – FDA

Types of Dietary Supplements

- Vitamins and minerals
- Major nutrients (protein, essential fatty acids)
- Botanicals and herbs
- Probiotics
- Other

Regulation

- Unlike drugs, supplements do **not** require FDA approval before hitting the market.
- The FDA can act after a product is on the market if it's found to be unsafe or misbranded.
- Manufacturers are responsible for ensuring safety and labeling accuracy, but oversight is limited.

Common Supplements

Most commonly used supplements

- Vitamin D – 70%
- Magnesium – 60%
- Omega-3 fatty acids – 49%
- Multivitamins – 42%
- Vitamin C – 36%
- Other:
  - Calcium
  - Probiotics
  - “greens”
  - Creatine
  - Zinc
  - Collagen

Vitamin D – 600 IU/d

- Benefits
  - Critical role in bone health
  - Research supports broad role throughout body and various systems
    - Muscles
    - Brain
    - Cardiac
- Dietary sources
  - Fortified products, egg yolks, fatty fish, certain mushrooms
- Need for supplement?
  - Common but verify with blood work!

Magnesium – 300-400 mg/d

- Benefits
  - Aids sleep and relaxation
  - Supports digestion
  - Critical for muscle and nerve function
- Dietary sources
  - Dark chocolate, avocado, legumes, nuts and seeds, whole grains
- Need for supplement?
  - If deficient
  - Specific type for targeted benefit

Omega-3s

- Benefits
  - Supports brain health
  - Fights inflammation
  - Improve heart health
- Dietary sources
  - Fatty fish
  - Nuts and seeds (low conversion)
  - Fortified foods
- Need for supplement?
  - Possibly

Multivitamin

- Benefits
  - Correct a known or expected deficiency
  - Most common inadequate intakes – iron, vitamin D, potassium, calcium
- Dietary sources
  - Nonrestrictive diet with focus on whole foods
- Need for supplement?
  - Unlikely

Vitamin C – 75-90mg/d

- Benefits
  - Antioxidant (fights oxidative stress)
  - Supports immune system
- Dietary sources
  - Fruits and veggies
    - Citrus fruit, berries, bell peppers, tomatoes
- Need for supplement?
  - Unlikely

Probiotics

- Benefits
  - Supports gut health
  - Improves brain health
- Dietary sources
  - Fermented foods like yogurt, kefir, miso, kimchi, kombucha, tempeh
- Need for supplement?
  - Focus on specific strains

Supplement Spotlight – Creatine

- Benefits
  - Increase athletic performance (strength, power, speed) and lean mass
  - Improves brain health – cognition, memory
- Sources
  - Meat-based products, seafood
- Need for supplement?
  - Possibly

Evaluating Supplements

Safety, effectiveness, cost/benefit

Evaluating a Dietary Supplement

- Safety
  - Ingredients
  - Dosage
- Purity
- Effectiveness

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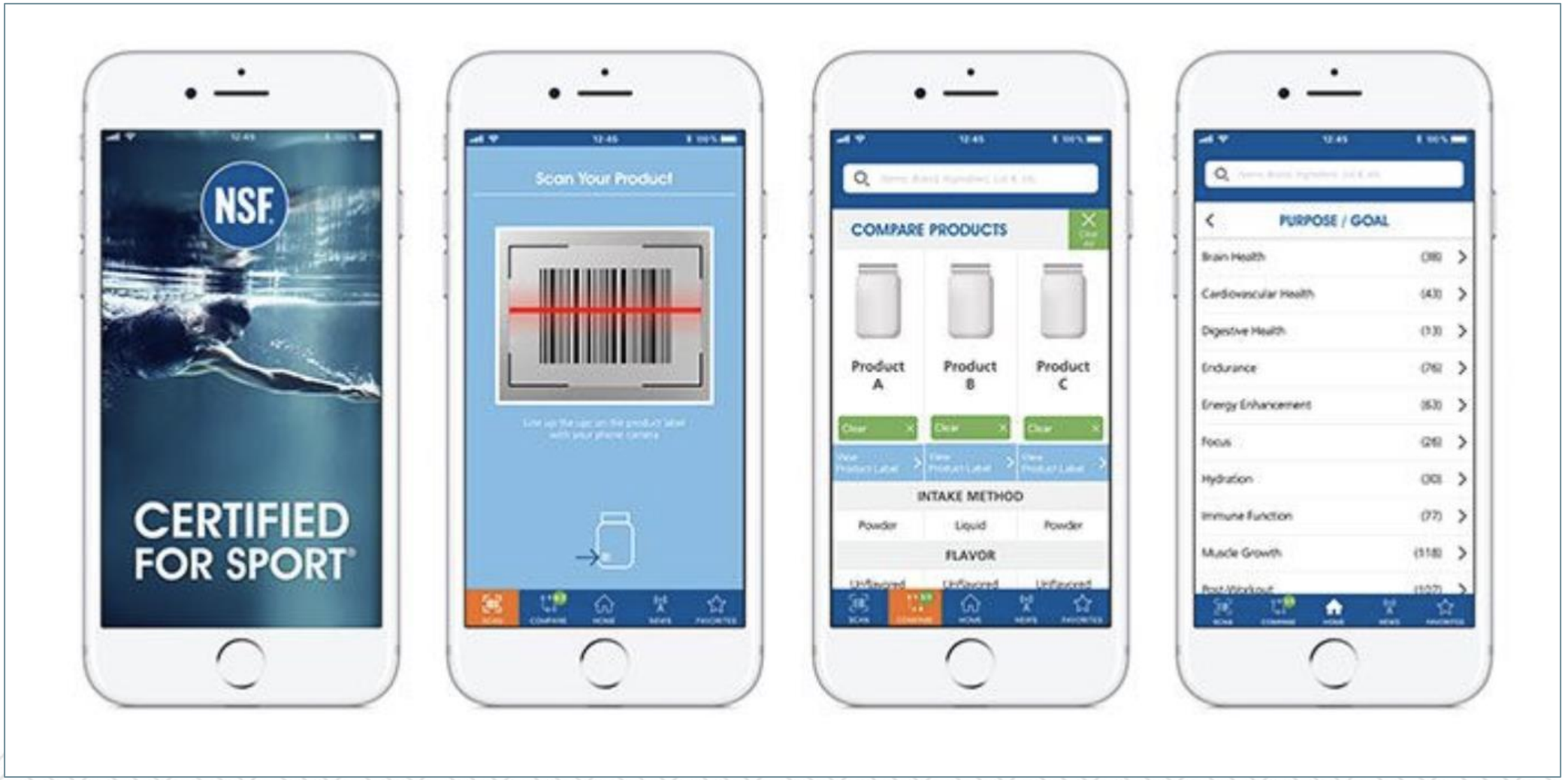
Evaluating a Dietary Supplement



When a supplement may be “worth it”

- Always consider cost: benefit
  - Cost – includes actual sticker price, potential side effects, interactions with medication or other supplements, risk of contaminated products
  - Benefits – potential health or performance advantage not available through food only
- Questions to ask:
  - What’s my motivation?
  - What are my goals, expected outcomes from taking this?
  - What does the evidence say?
  - What products have been 3rd party tested?

Choosing Supplements

Food *first*, but not always food *only*.

Who can benefit?

- Nutrient deficiency is known or expected
  - Examples:
    - Food allergy: Celiac disease, fortified products (B vitamins)
    - Dietary restriction: vegan or vegetarian, calcium, vit D, B12, iron, zinc, iodine
- Specific health or performance benefit not realistic with food only
  - Examples:
    - Vitamin D
    - Omega-3 fatty acids
    - Probiotics
    - Creatine

Decision Tree

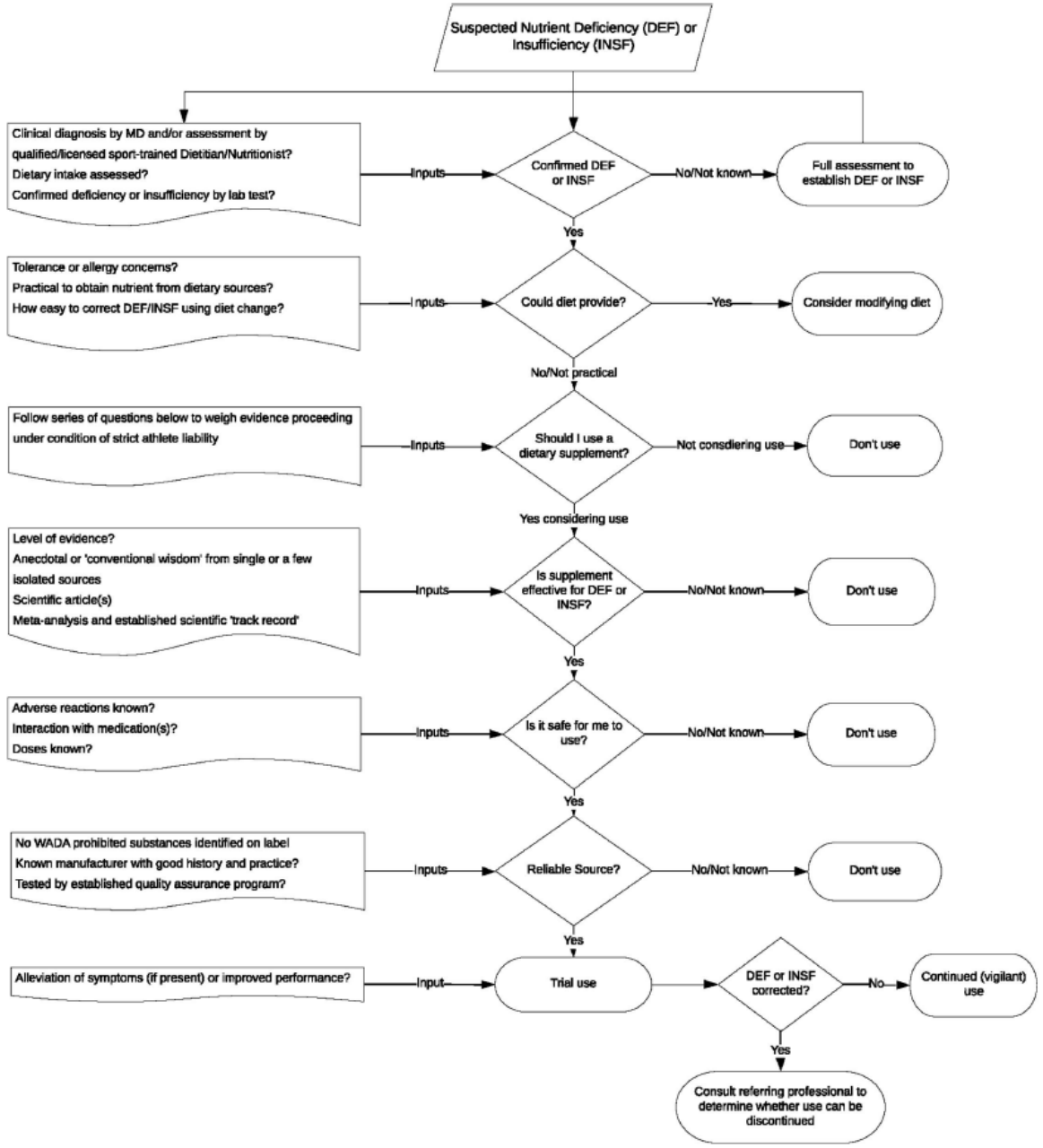
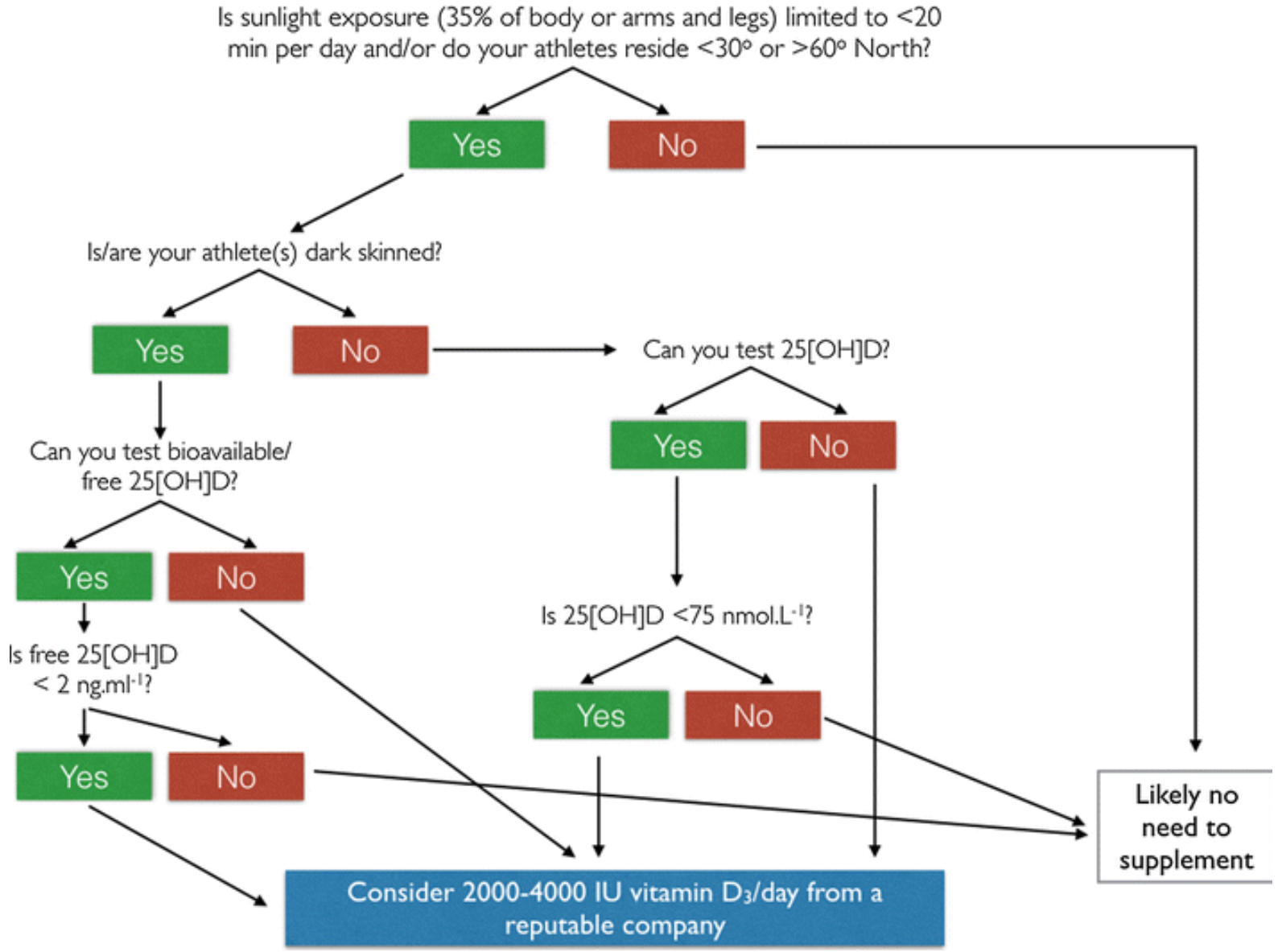


Figure 2 — Flow chart to guide informed decision making and reducing risk of anti-doping rule violation during nutritional supplement use.


Is sunlight exposure (35% of body or arms and legs) limited to <20 min per day and/or do your athletes reside <30° or >60° North?
Yes
No
Is/are your athlete(s) dark skinned?
Yes
No
Can you test 25[OH]D?
Yes
No
Can you test bioavailable/ free 25[OH]D?
Yes
No
Is 25[OH]D <75 nmol.L-1?
Yes
No
Is free 25[OH]D < 2 ng.ml-1?
Yes
No
Likely no need to supplement
Consider 2000-4000 IU vitamin D3/day from a reputable company

Considerations for supplements

1) Dosage
2) Brand
3) Timing
4) Inhibitors vs enhancers

When to Seek Professional Advice

Safety is #1!

Seek Advice When…

- You are considering a new supplement
- You have a known or expected health condition
- You are taking medications or other supplements

Resources

- 3rd party testing
  - Nsfsport.com
  - Informed choice: choice.wetestyoutrust.com
  - USP: quality-supplements.org
- Education
  - NIH Office of Dietary Supplements: ods.od.nih.gov
  - Council for Responsible Nutrition: www.crnusa.org
  - Examine.com

Wrap-Up

What surprised you?

What did you learn?

What will you do?