

# Estimating intake of dietary supplements during pregnancy

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# Importance of dietary supplements

Micronutrient inadequacy is common in US pregnant women

- 4 of 5 women do not get enough vitamin D, vitamin E, or iron from food sources

- 1 of 4 women do not get enough B6, folate, C, calcium, magnesium, zinc

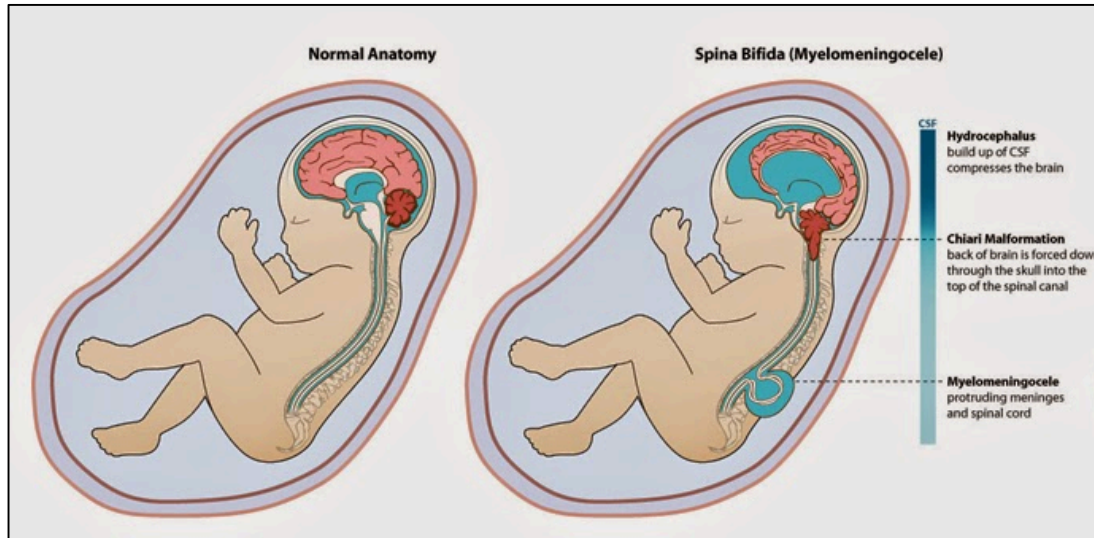
- Vegan diet: higher risk of inadequate B12, D, calcium, iron, iodine, and omega3 fatty acids

- Numerous barriers to eating a nutritionally-adequate diet (knowledge, cooking skills; time, cost, effort; morning sickness, obstetric complications)

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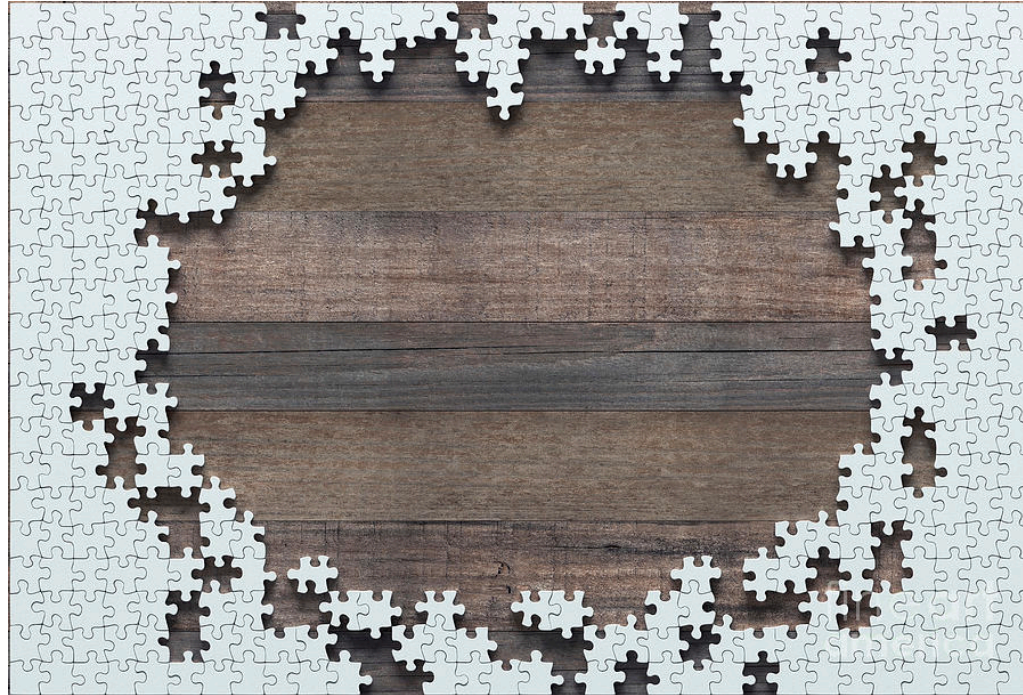
Over 95% of pregnant women use prenatal vitamins at some point during pregnancy





# Importance of dietary supplements

Not measuring dietary supplement use in pregnancy  
provides incomplete picture of nutrient intake



# Best practices

Frequency of assessment

Preparing the woman for assessment

Critical details

Specific tips for

- 24-hour recalls

- Food frequency questionnaires

- Food records

Knowing your limits



# Frequency of assessment

Use of dietary supplements increases across pregnancy  
63% (T1) → 80% (T2) → 91% (T3)

Specific product(s) used can change over pregnancy

- Changing to/from prescription vitamin

- Changes within non-prescription vitamins

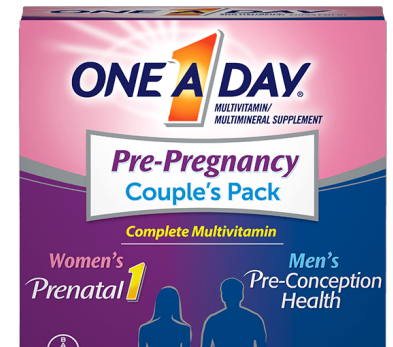
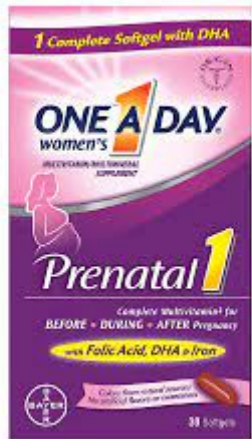
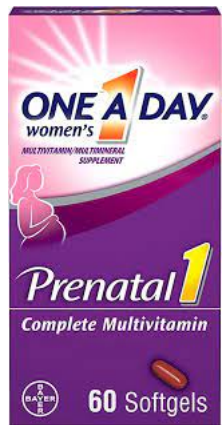
- Changes within prescription vitamins

Multiple assessments optimal



# Preparing the woman for assessment

Help her report exactly what she is taking  
Bring the container to the appointment  
Send a picture of the supplement



# Critical details

Goal is to get complete picture of what the woman is using

Name (ex: Prenatal 1 with folic acid and DHA)

Brand (ex: One A Day)

Dose (ex: 1 tablet)

Frequency (ex: daily)

Reference time period (ex: today, or starting/stopping dates)

# Specific tips for 24-hour recalls

Can use the optional supplement module to assess dietary supplements used in the target 24-hour period

- Linked to supplement databases to provide micronutrient content

- Challenges if target period was not normal (missed supplement, took extra)

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- Can use external dietary supplement log

  - NHANES – queries use of all supplements in last 30 days (with name, brand, dose, and frequency)

# Specific tips for food frequency questionnaires

Can use the built-in FFQ questions about supplements

Linked to supplement databases to provide micronutrient content

Restricted answer options/details



## Vitamins and supplements

### What vitamins and dietary supplements did you take?

Please check the box next to each vitamin or dietary supplement that you took at least once in the past month.

☐ Multivitamin/mineral (such as One-A-Day, Centrum, Nutrilite, Geritol or prenatal, as pills, liquids or packets; *NOT including eye health supplements*)

☐ B-complex (*NOT as part of a multivitamin*)

☐ Antacids (such as Tums or Rolaids)

☐ B-12 (*NOT as part of a multivitamin*)

☐ B-6 (*NOT as part of a multivitamin*)

☐ Biotin (*NOT as part of a multivitamin*)

☐ Calcium (with or without vitamin D; *NOT as part of a multivitamin or antacid*)

☐ Coenzyme Q

☐ Fiber supplement (such as Metamucil or Benefiber)

☐ Folate or folic acid (*NOT as part of a multivitamin*)

☐ Garlic supplement

☐ Joint supplement (such as glucosamine, with or without chondroitin or other ingredients)

☐ Iron (*NOT as part of a multivitamin*)

☐ Magnesium (*NOT as part of a multivitamin*)

☐ Melatonin



# Specific tips for food frequency questionnaires

- Can use the built-in FFQ questions about supplements

  - Linked to supplement databases to provide micronutrient content

  - Restricted answer options/details

- Can use external dietary supplement log

  - Queries use of all dietary supplements in target period

# Specific times for food records

Include instructions for reporting dietary supplement use during target period

Brand, type, dose, frequency

Can use external dietary supplement log for alternate time periods

Food log: 3 days or 7 days

Dietary supplement log: 30 days, 3 months, since last measurement, etc.

# Knowing your limits

Some women cannot (or will not) report exactly what (and all) they are taking

Repeated assessments can help with memory

Need to plan for missing data (exclusion, imputation)

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- Content listed on the bottle  $\neq$  content in the bottle

  - True amount may be different

  - May have contaminants that interact with ingredients

  - Nutrient biomarkers can provide further information

# Conclusions

Assessing dietary supplement is key to fully understanding nutrient exposures

Critical details can construct comprehensive supplement record in pregnancy

Best method depends on research question and available resources

