

The most abundant tissue in the body is *connective tissue*, a type in which the cells are somewhat separated from one another by a surrounding substance called a *matrix*. Two of the body’s connective tissues, blood and bone, require protein and certain key micronutrients (identified in [Table 9.1](#)) for their structure and functions, as you’ll discover in this chapter. We’ll also explore the role of vitamin C in the synthesis of collagen, a protein present in the matrix of connective tissues throughout the body.

Table 9.1 Overview of Nutrients Essential to Healthy Tissues

Nutrient	Recommended Intake
Iron	RDA for 19 to 50 years of age: Women = 18 mg/day Men = 8 mg/day
Zinc	RDA for 19 to 50 years of age: Women = 8 mg/day Men = 11 mg/day
Copper	RDA for 19 to 50 years of age: 90 µg/day
Vitamin B ₆ (pyridoxine)	RDA for 19 to 50 years of age: 1.3 mg/day RDA for 51 years of age and older: Women = 1.5 mg/day Men = 1.7 mg/day
Folate (folic acid)	RDA for 19 years of age and older: 400 µg/day
Vitamin B ₁₂ (cobalamin)	RDA for 19 years of age and older: 2.4 µg/day
Vitamin K	AI for 19 to 50 years of age: Women = 90 µg/day Men = 120 µg/day
Vitamin C	RDA for 19 years of age and older: Women = 75 mg/day Men = 90 mg/day Smokers = 35 mg more per day than RDA
Calcium	RDA for 19 to 50 years of age: 1,000 mg/day Women 51 years of age and older = 1,200 mg/day Men 51 to 70 years of age = 1,000 mg/day; 70 years of age and older = 1,200 mg/day
Phosphorus	RDA for 19 years of age and older: 700 mg/day
Magnesium	RDA for 19 to 30 years of age: Women = 310 mg/day Men = 400 mg/day RDA for 31 years of age and older: Women = 320 mg/day Men = 420 mg/day
Fluoride	RDA for 19 years of age and older: Women = 3 mg/day Men = 4 mg/day
Vitamin D	RDA for 19 to 70 years of age:* 600 IU/day RDA for 71 years of age and older: 800 IU/day

*Based on the assumption that a person does not get adequate sun exposure.

You Do the Math

Calculating Daily Iron Intake

Determining whether or not you're getting the iron your body needs each day can be tricky because the amount you consume may not be the amount that is absorbed. Food combinations, fortified foods, and supplements all make a difference. Determine the amount of iron available for absorption in the following food choices for one day for Hannah, who is menstruating normally:

Foods with heme iron (15% available):

- Turkey, light meat (3 oz): 1.1 mg
- Tuna, light canned (3 oz): 1.3 mg

Foods with non-heme iron (5% available):

- Oatmeal, 1 instant packet: 11 mg
- Spinach, 1 cup raw: 6.4 mg
- Bread, whole wheat 2 slices: 1.4 mg

Multivitamin/mineral supplement with 18 mg of Fe (5% available). This is the amount of iron in a typical 1-day multivitamin/mineral supplement designed for menstruating women.

What is the total available iron for absorption (mg/d)? Does it cover the amount of iron lost each day? If Hannah were not taking a daily supplement, would she still be getting adequate iron?

Answers can be found in the MasteringNutrition Study Area.