8.55 Vitamin E DRI & IUs

Before 2001, all forms of vitamin E counted towards the RDA, using a measure called alpha-tocopherol equivalents. In 2001, the Dietary Reference Intake (DRI) committee decided only 2R forms of alpha-tocopherol should be used to estimate the requirement, because these forms bind to alpha-TTP. Thus, other forms of vitamin E (gamma-tocopherol, tocotrienols etc.) do not count towards the requirement and the unit is now mg of alpha-tocopherol. As a result, soybean, corn, and flaxseed oils, which are good sources of gamma-tocopherol, are no longer considered to be good sources of vitamin E. The figure below is a reminder of the tocopherol content of different nuts & oils.

![Figure 8.551 Only the yellow bars count towards the 2001 DRI requirement](image)

Another level of complexity is added by the introduction of international units (IU). IUs are a unit that are used to describe the bioactivity of different compounds, including 4 vitamins: A, D, E, and C. It would be less confusing if these units were not used. However, most supplements use IUs. IUs are not as common on food items.

For vitamin E, IUs are specific for alpha-tocopherol and adjusted for the molecular weight of the different forms (alpha-tocopherol acetate etc.). The conversion factors for converting IU to mg of alpha-tocopherol are:

- 0.67 for RRR-alpha-tocopherol (and its esters)
- 0.45 for all-rac-alpha-tocopherol (and its esters)
Here are some example calculations showing how to use these conversion factors:

Example 1. For a supplement containing 100 IU of RRR-alpha tocopherol:

\[ 100 \text{ IU} \times 0.67 = 67 \text{ mg alpha-tocopherol} \]

Example 2. For a supplement containing 100 IU of all-rac-alpha tocopherol:

\[ 100 \text{ IU} \times 0.45 = 45 \text{ mg alpha-tocopherol}^{2, 3} \]

**References & Links**
3. http://lpi.oregonstate.edu/ss01/attp.html