There are 3 forms of vitamin A (retinol, retinal, and retinoic acid) that collectively are known as retinoids. Retinol is the alcohol (OH) form, retinal is the aldehyde (COH) form, and retinoic acid is the carboxylic acid (COOH) form, as shown in the figure below (areas of difference are indicated by red in the figure below).

Among these different retinoids, retinol and retinal are fairly interchangeable. Either form is readily converted to the other. However, only retinal is used to form retinoic acid, and this is a one-way reaction. Thus, once retinoic acid is formed it can't be converted back to retinal, as shown in the figure below.
There are 2 primary dietary sources of vitamin A:

Retinyl/retinol esters (Animal Products)
Provitamin A Carotenoids (Plants)

Preformed vitamin A means that the compound is a retinoid. Preformed vitamin A is only found in animal products (carrots are not a good source of preformed vitamin A). Most retinol in animal products is esterified or has a fatty acid added to form retinyl esters (aka retinol esters). The most common retinyl ester is retinyl palmitate (retinol + the fatty acid palmitate) whose structure is shown below.

![Retinyl palmitate](http://en.wikipedia.org/wiki/File:Retinyl_palmitate.png)

Provitamin A is a compound that can be converted to vitamin A in the body, but currently isn’t in vitamin A form. The next section will talk about carotenoids, some of which are provitamin A compounds.

International units are also used for vitamin A, such that:

1 IU = 3.33 ug retinol
0.3 IU = 1 ug retinol

Subsections:

11.61 Carotenoids
11.62 Vitamin A Uptake, Absorption, Transport, & Storage
11.63 Vitamin A Nuclear Receptors
11.64 Vitamin A Functions
11.65 Vitamin A Deficiency & Toxicity

References & Links