Broccoli

1. **What is Broccoli**
   1. Broccoli is a member of the cabbage family, also known as the mustard family, and a close relative of cauliflower as well as kale, cabbage, turnips, rutabagas, and brussel sprouts
   2. The word broccoli comes from the Latin word *brachium* which means branch or arm
   3. Broccoli is also the plural form of the Italian word *broccolo,* which refers to “the flowering top of a cabbage”
   4. In the U.S. broccoli is the most favored cruciferous vegetable
      1. Cruciferous refers to the cabbage family that broccoli is a part of: *Brassicaceae* or *Cruciferae*
      2. The word cruciferous refers to the four petals of the plant’s blossom, which resembles the Greek cross
   5. Broccoli can come in a variety of colors—green (Calabrese), yellow-green (Romanesco), purple, and white
      1. Calabrese is the most common variety found in the U.S.
      2. It is named for the region of Italy where it was first grown, Calabria
      3. It is also known as the Italian Green
   6. Other varieties of broccoli include Sprouting, which has a larger number of heads and thinner stalks, and Romanesco, the yellow-green type which has numerous small cone-shaped heads arranged in spirals
   7. Broccolini, also called baby broccoli, is a cross between Chinese kale and Calabrese broccoli
      1. It is smaller and sweeter than the Calabrese, broccolini looks like an asparagus stalk with a broccoli head
   8. Broccoli Rabe (pronounced “Rob”), also called rapini or broccoletti, closely resembles broccoli
      1. Although it is also a member of the cabbage family, broccoli rabe is actually more closely related to turnips despite its name
      2. Very popular in Italian cuisine, it has thinner stalks and a much stronger flavor than Calabrese broccoli
2. **History of Broccoli**
   1. Broccoli has been cultivated for over 2000 years
   2. Derived from wild cabbage, it originated in the eastern Mediterranean region and was a favorite of the ancient Romans
   3. Broccoli was first recognized in northern Europe in France in 1560 and later to England in the 1720s
   4. Some scholars recognize broccoli in literature as early as the 4th century in the Roman cookbook, Apicius
   5. Early on, broccoli was referred to by the English in the 1724 Gardener’s Dictionary as a stranger in England, and explained it as “sprout colli-flower” or “Italian asparagus”
   6. Though often compared to asparagus in flavor when first described, broccoli and asparagus are not actually related
   7. In the American colonies, experimental gardener Thomas Jefferson traded rare vegetables from the Americas, such as tomatoes, for other exotic seeds with his European correspondents. In 1767, he noted the planting of broccoli along with radishes, lettuce, and cauliflower in Monticello.
   8. In *A Treatise on Gardening by a Citizen of Virginia* around 1775, John Randolph described the curious hybrid flavors of broccoli: “The stems will eat like asparagus, and the heads like cauliflower”
   9. Broccoli remained an “exotic” vegetable until the 1900s when it was introduced to family gardens in Brooklyn, New York by Italian immigrants
   10. It wasn’t until the late 1920s that Italian immigrants in northern California began planting broccoli to sell commercially
   11. The first commercial shipments were to Boston, where Italian immigrant culture thrived
   12. With that, broccoli business boomed under the D’Arrigo company brand name “Andy Boy”, and with the help of radio advertisements
3. **Nutrition & Health Benefits of Broccoli**
   1. Broccoli is low in calories, fat and sodium, free of saturated fat and cholesterol, and a good source of fiber and protein
   2. A true powerhouse food, it contains the most nutrients of any other vegetable!
   3. Broccoli is packed with vitamins
      1. A half-cup of cooked, chopped broccoli provides the same amount of vitamin C as a half-cup of orange juice
      2. Broccoli is also rich in vitamin K
         1. About blood thinners, vitamin K and broccoli
         2. Vitamin K is used by the liver to produce blood clotting proteins.
         3. Thus, if you are taking a blood thinner like Warfarin (Coumadin), you need to pay special attention to the amount and frequency of vitamin K foods that you eat.
         4. Consistency is the key. The best strategy is to keep the amount of foods with vitamin K in your diet steady.
         5. Eating more foods high in vitamin K than usual, like broccoli, can reduce the effect of warfarin. Similarly, eating fewer foods high in vitamin K than usual can increase the effect of warfarin. AGAIN, CONSISTENCY!
         6. High vitamin K foods: ½ cup of broccoli or green leafy vegetables (kale, spinach, any kind of greens)
         7. Moderate vitamin K foods: ½ cup of green cabbage, romaine/leaf lettuce or asparagus
         8. Low vitamin K foods: ½ cup of green beans, cauliflower, celery, or peas; 1 cup of iceberg lettuce
      3. Broccoli provides a good source of vitamin A, as well as carotenoids beta-carotene and lutein, which help to reduce the risk of cataracts and age-related macular degeneration
      4. Added bonus: the abundance of vitamins A and K also helps to keep the metabolism of vitamin D in balance, which in turn helps the body absorb the calcium also found in broccoli!
      5. Vitamin B6 and folate are in high supply as well, providing anti-inflammatory effects and cardiovascular protection!
   4. Broccoli is also a great source of several important minerals as well
      1. Calcium to promote bone health and prevent osteoporosis
      2. Potassium to fight high blood pressure
      3. Iron, another essential mineral that our bodies need to stay healthy
   5. Broccoli is rich in those hard-to-pronounce antioxidant compounds
      1. It contains several sulfur-containing compounds—which shouldn’t be surprising, given that you can always smell when broccoli is being cooked!
      2. These compounds may give broccoli its cancer-fighting properties as well as its distinctive taste (which some people may not be fond of)
      3. Another protective compound, glucoraphanin (glue-co-RAF-a-nin), helps to repair and rid skin of harmful substances
      4. In addition, the body can convert it to another important compound with anti-cancer properties that rid the gut of harmful bacteria
      5. Several other antioxidant compounds found in broccoli help to slow the growth of breast, cervical and prostate cancer while also boosting liver function
   6. Nutrient content of broccoli diminishes slightly with increased storage time, water contact, and heat exposure
   7. Factors that influence the extent that nutrients are reduced during cooking include how long the food is cooked, how much liquid is used, and the cooking temperature

Some nutrients are actually better absorbed if the vegetable is cooked. This is because some nutrients can be held tightly by the cell wall. Cooking softens cell walls, making the nutrients more readily absorbable. This is true of some carotenoids that are found in broccoli.

* 1. In fact, cooking with a microwave may actually do a better job of preserving the nutrient content of foods than conventional methods simply because the cooking time is shorter and involves less heat.

1. **Selection, Storage, and Handling of Broccoli**
   1. Broccoli is available year-round but is truly “in season” from fall to early spring
   2. As a cool-season vegetable, two crops per year can be grown in most parts of the country
   3. Choose broccoli heads that are odorless with tight, bluish-green florets
   4. The darker the better: a darker green appearance means higher nutrient content
   5. Fresh broccoli should be refrigerated and used within 3-5 days for best taste and nutritional value
   6. Because wet broccoli becomes limp and moldy in the refrigerator more quickly, wash just before using, or dry as much as possible before storing, and use loose, perforated bags
   7. Broccoli can also be frozen, but it must be blanched or scalded first
   8. **Why do we blanch veggies?**
      1. Unblanched vegetables contain an active enzyme that causes toughening, severe flavor and nutrient loss during freezing; blanching diminishes this enzyme activity
   9. Broccoli is great raw, steamed, stir-fried, roasted, or boiled, although, as mentioned earlier, boiling reduces the nutritional value more than other cooking methods
      1. Boiling broccoli or other vegetables causes some of the nutrients to leach out into the boiling liquid
      2. To still receive the nutritional value of vegetables cooked by boiling, save the boiling liquid for soups or stews
      3. The preferred method for optimal flavor and nutritional value of cooked broccoli is steaming for 3-4 minutes
      4. Cooked broccoli should be bright green, and tender-crisp
      5. Overcooked broccoli will develop a sulfur odor, turn dark green, and suffer the most nutrient loss, especially of vitamin C
   10. Complementary herbs and spices for broccoli include basil, dill, garlic, lemon, marjoram, oregano, tarragon, and thyme
   11. Many broccoli recipes use cheese and/or heavy cream sauces—maybe created by people who don’t like broccoli or parents trying to get their kids to eat broccoli!
       1. Healthier, flavor-enhancing additions include a squeeze of lemon juice, slivered almonds, sesame seeds, toasted bread crumbs, or a sprinkling of parmesan cheese
       2. If you don’t care for the taste of broccoli, try broccolini, a milder version
2. **Fun Facts**
   1. The average American eats about 4.5 pounds of broccoli each year
      1. Compare that to 1970, when consumption of broccoli was only half a pound per person—that’s a 900% increase!
   2. One half-cup of raw or cooked broccoli contains only 15 calories
   3. Cutting an X in the bottom of the broccoli stalk will help it cook more evenly—this is because the stalks are more dense than the head, and usually take longer to cook
   4. Over 30,000 broccoli plants can grow in one acre of land—it may take two to three passes to completely harvest a field of broccoli
   5. 90% of broccoli grown in the U.S. comes from California
   6. It is also grown in Arizona, Washington, Maine, Wisconsin, Ohio, Colorado, Oregon, Texas, and Florida
   7. What do you get when you cross broccoli and cauliflower? *Broccoflower* of course, also known as Romanesco
   8. In Treehouse of Horror XI, Homer Simpson is killed by eating broccoli; we certainly DO NOT support this message!
   9. There’s a reason why they’re called broccoli “florets”—the part we eat and regard as a vegetable is actually a large group of edible flower buds.
   10. If not harvested in time, broccoli will turn into a head of yellow flowers
3. **Broccoli Activities**
   1. Taste broccoli versus broccolini
   2. If available, show purple broccoli
   3. Show the difference between just cooked (bright green) and overcooked (dark green, sulfur odor) broccoli