HOW TO TRIPLE YOUR ANTIOXIDANT ABSORPTION FROM MATCHA
The Science

Green tea and lemon...a match made in heaven? Scientists at Purdue University think so.

Tea and lemon are one of those classic combinations like peanut butter and jelly that just goes so well together, but science suggests that your body may actually benefit from this duo beyond pleasing your palate. According to several recent studies, there is something about the combination of citrus juice and green tea that simply does the body good.

One of the traditional problems people have with getting enough nutrients in their diet is absorption. It doesn’t really matter how many dark leafy green vegetables you eat or how much green tea you drink if your body isn’t absorbing it properly to dispense it where it is needed. Adding lemon and even sugar (yes, sugar) to your green tea can help the body absorb necessary catechins found in tea.

What are catechins?

If you’ve ever read about the benefits of green tea, grapes or even cocoa then you have probably heard about catechins. They are a specific class of natural polyphenols and antioxidants that aid in the fight against illnesses such as cancer, diabetes, stroke and heart disease\(^1\). In fact, catechins are exactly the substance responsible for many of the health benefits associated with green tea specifically.

It’s no secret that green tea is packed with antioxidants, but according to Mario Ferruzzi, Associate Professor of Food Science & Nutrition at Purdue University, catechins are not as stable without the assistance of acidic environments like the intestines. This means that less than a quarter of the catechins found in green tea are actually being absorbed into the bloodstream after the digestive process\(^2\). But, by adding citrus juice to your green tea, the level of catechins in the blood increases to five times the levels without citrus juice.

Ferruzzi and his team of researchers looked into other beverage additives as well, such as creamers, milk, citric acid and citrus juice, adding them each to tea in incremental doses. By comparing the pre and post-digestion levels of

\(^1\) Wallheimer, B. (2009). Model backs green tea and lemon claim, lessens need to test animals. Purdue University News.

catechins they were able to determine that on its own, green tea has poor catechin absorption.

But the results do provide relief for those who enjoy a bit of milk with their green tea; cow milk increased catechin absorption by 52%, soy milk increased by 55% and rice milk increased by a staggering 69%. The ascorbic acid added to premade tea beverages produced impressive results but given the multitude of drawbacks found with these sugary drinks, the only advantage would be catechin absorption rates. Unfortunately due to the lack of actual green tea in these beverages, even that would be minimal.

The star of this study however was definitely citrus juice, which increased epigallocatechin (EGC) levels between 81 and 98%; epigallocatechin-gallate (EGCG) by 56 to 76%; epicatechin (EC) levels from 86 to 95% and epicatechin-gallate (ECG) levels by 30 to 55%, depending on the citrus juice added.

Whether you drink green tea because you like the unique taste or you drink your three cups a day strictly for the health benefits, science says adding a teaspoon or more of orange, lemon, grapefruit or lime juice will increase the rate at which your body absorbs disease preventing antioxidants. Additionally adding citrus juice to your green tea will make it more palatable for those who avoid green tea due to its slightly bitter taste.

But if you still can’t gulp down your green tea and lemon juice each day, consider using Matcha green tea powder and citrus juice in your favorite recipes to increase absorption rates of antioxidants.
CITRUS MATCHA SWEET TEA

Ingredients
- 2 slices Lemon
- 2 slices Orange
- 1 slice Lime
- Ice cubes, as needed
- 4 cups Cold water
- 2 tsp. Organic Matcha Green Tea
- ¼ cup Agave or Honey
- Juice from remaining citrus fruits

Directions
1. Combine water and Matcha, stirring until Matcha is completely dissolved.
2. Add citrus juice and sweetener to water and stir until combined.
3. Add in ice and citrus slices.
4. Serve cold.

Makes: 4 servings
MATCHA MINT LEMONADE

Ingredients
- 4 cups Cold water
- 2 tsp. Organic Matcha Green Tea
- 6 Mint leaves
- 1 Lemon, juice & zest
- 3 tbsp. Raw honey
- Ice

Directions
1. Mix cold water and Matcha until the powder is completely dissolved. **Tip:** Use warm water for better mixture and add ice to chill.
2. Stir in lemon juice, honey, mint and lemon zest.
3. Serve over ice or chill in refrigerator for at least 2 hours.
4. Garnish with lemon slices if desired.

Makes: 4 servings
MATCHA-GRAPEFRUIT COOLER

Ingredients
- 4 grapefruits
- 2 tsp. Organic Matcha Green Tea
- 1 Lime, sliced
- 1 cup Club soda

Directions
1. Juice grapefruits and place half the juice in a small pot and warm through.
2. Stir in Matcha until dissolved and remove from heat.
3. Place ice and lime slices in 2 glasses.
4. Pour grapefruit juice over ice and top with club soda.

Makes: 2 servings
FRUITY CITRUS MATCHA SMOOTHIE

Ingredients
- 1 tbsp. Organic Matcha Green Tea
- 1 tbsp. Orange zest
- 1 cup Mango chunks
- 2 Oranges, cut into chunks
- ½ Lemon, juiced
- ½ Lime, juiced

Directions
1. Place all ingredients into a food processor or blender, adding the Matcha last.
2. Pulse about 10 times until everything starts to break down.
3. Run on high until ingredients are blended and desired consistency is reached.
4. Chill and enjoy!

Makes: 1 Smoothie
LEMONY MATCHA MARBLE CAKE

Ingredients
- 6 Eggs (or egg substitute)
- 2 1/3 cup All-purpose flour or cake flour
- ¼ tsp. Salt
- 2 ¼ cup Fine brown sugar
- 2 ½ tsp. Baking powder
- 1 tsp. Real vanilla extract
- 2/3 cup Greek yogurt
- 1 Lemon, zested
- ½ Lemon, juiced
- 1 tbsp. Organic Matcha Green Tea
- 15 tbsp. Unsalted butter, melted

Directions
1. Preheat oven to 350° F.
2. Butter a loaf pan, then coat with flour, tapping out the excess.
3. Sift flour, salt and baking powder into a large mixing bowl.
4. In another bowl, mix sugar and eggs until blended and fluffy.
5. Add in vanilla and yogurt.
6. Add the dry ingredients into the wet in 4 batches; ensure each batch is completely blended before adding another.
7. Next add in melted butter in 3 batches, stirring between each addition.
8. Divide batter into 2 bowls. This is to get the ‘marble’ effect.
9. In one bowl of batter fold in the lemon juice and zest. In the other bowl fold Matcha in with a spatula.
10. Pour about ½ of the lemon batter into a loaf pan and top with some of the Matcha batter.
11. Pour a bit more lemon batter on top and swirl using a butter knife until you get a beautiful marble effect.
12. Bake 55 minutes to 1 hour, or until a toothpick inserted comes out clean.
13. If you have leftover batter, make a batch of cupcakes and bake for 15 to 20 minutes.
14. Cool for 15 minutes and serve.

Makes: 8 servings
VEGAN MATCHA ICE CREAM

Ingredients

- 3 Bananas, sliced
- ½ tbsp. Organic Matcha Green Tea
- 1 tbsp. Raw honey
- ½ tsp. Fresh ginger, minced
- 1 tbsp. Orange zest
- 1 tsp. Lime zest
- 1 Lime, juiced

Directions

1. Slice bananas and freeze for 2 hours.
2. Place all ingredients except honey into the bowl of a food processor.
3. Run on high until well-blended.
4. Pour into an airtight container and fold in honey.
5. Cover and freeze or enjoy right away!

Makes: 3 servings
MATCHA LEMON SEA SALT

Ingredients

- ¼ cup Sea Salt
- 1 Lemon, zested
- ½ Lime, zested
- ½ tbsp. Organic Matcha Green Tea

Directions

1. Pour lemon and lime zest onto a paper towel and allow it to dry out for about 20 minutes.
2. Mix salt, Matcha and zest into a food processor until blended.
3. Use it to season a dish or as a finishing salt at the end for a splash of color.

Makes: ¼ cup of salt
OVEN BAKED LEMON MATCHA PORK CHOPS

Ingredients
- 4 Boneless pork chops
- ½ tbsp. Cayenne pepper
- 1 tbsp. Sea salt
- 2 tsp. Black pepper
- 1 tbsp. Lemon zest
- 1 cup Panko bread crumbs
- ½ cup Flour
- 1 tbsp. Organic Matcha Green Tea
- 2 tsp. Ground ginger
- 1 Orange, juiced plus 1 tbsp. orange zest
- ¼ cup Olive Oil

Directions
1. Mix olive oil, orange juice, orange zest, ginger and half the salt and pepper into a shallow baking dish.
2. Add pork chops and turn several times to coat with marinade. Marinate for 30 minutes to 2 hours in the refrigerator.
3. In a shallow dish, add the remaining salt and pepper, Panko, matcha, cayenne, flour and lemon zest and mix well.
4. Preheat oven to 350° F
5. Drag each pork chop through the flour-Panko mixture until well coated on each side. Use your hands to pat the mixture down if it doesn't stick properly.
6. Place each chop on a greased baking dish and make 30 to 40 minutes, or until pork chops reach an internal cooking temperature of 150° F.

Makes: 4 servings
MATCHA ORANGE MASHED POTATOES

Ingredients

- 4 Large potatoes, peeled & chopped
- 1 tbsp. Organic Matcha Green Tea
- 1 ½ tbsp. Unsalted butter
- 2 tsp. Orange zest
- 2 tbsp. Orange juice
- Sea salt & Pepper to taste
- 2 Garlic cloves, roasted & chopped
- 1/8 cup Milk

Directions

1. Cover potatoes with water and boil 10 minutes or until soft.
2. Drain potatoes, reserving about ½ cup of starchy water.
3. In same pot potatoes were boiled, add butter and Matcha and whisk until blended.
4. Add milk, garlic, zest and juice and whisk again.
5. Put potatoes back into the pot and remove from heat to mash.
6. Slowly add milk or starchy water as needed to think the potatoes out.
7. Stir to blend and serve.

Makes: 4 servings
MATCHA LEMON-TINI

Ingredients

- ½ tsp. Organic Matcha Green Tea
- 2 oz. Lemon vodka
- 3 Ice cubes
- 2 oz. Vermouth, dry
- 1 tbsp. Raw sugar
- 1 Lemon wheel half
- 1 Lemon wedge

Directions

1. Chill martini glass in the freeze for about 5 minutes.
2. Pour ice, vodka, vermouth and Matcha into a cocktail shaker.
3. Shake well for about 15 seconds.
4. Remove glass from freezer and rub the lemon wedge around the rim of the glass.
5. Dip glass in sugar until coated.
6. Strain liquid into glass and garnish with lemon half-wheel.
7. Drink up!

Makes: 1 Martini