

OHNEP COVID-19: OrAll in the Family Case Study

COVID-19 risk increases for individuals, families and communities disproportionately affected by chronic diseases and the social determinants of health. These same populations are at higher risk for oral disease. Common risk factors include obesity, poverty, stress, poor diet, alcohol and tobacco use, substance misuse, mental health issues and domestic violence. Many of these factors have been heightened during the pandemic. These and other social determinants of health contribute increased risk of COVID-19, exacerbation of chronic disease and poor oral health.

- ◇ **The Collins family is a multi-generational African-American family living in the Bronx.**
- ◇ The family wanted to gather for Grandma Collins' 90th birthday. She resides in assisted living and is fully vaccinated. The Collins family discussed how to gather as safely as possible.
- ◇ Grandma and Carla are fully vaccinated. Joe is reluctant to get the vaccine even though he is qualified for it. Laurette, Mike and their children Tanisha and Troy are not. **What would you consider their risk level for COVID-19 for having an indoor family dinner?**

Collins Family Members

- ✓ **Grandma Collins, age 90** – mother of **Carla** and **Joe**
- ✓ **Carla, age 68** – daughter of Grandma Collins; widow; mother of **Laurette**
- ✓ **Joe, age 69** – son of **Grandma Collins**; single
- ✓ **Laurette, age 42** and **Mike, age 44** - parents to **Tanisha, age 13** and **Troy, age 5**

Grandma Collins has mild dementia, has poor oral health, and requires assistance for all activities of daily living (ADL) including oral hygiene.

Read: *Edahiro, A., Okamura, T., Motohashi, Y., Takahashi, C., Sugiyama, M., Miyamae, F. ... & Awata, S. (2020). Oral health as an opportunity to support isolated people with dementia: useful information during coronavirus disease 2019 pandemic. Psychogeriatrics, 21(1), 140-141. doi: 10.1111/psyg.12621.*

Read: Marchini, L. & Ettinger, R.L. (2020). COVID-19 Pandemics and Oral Health Care for Older Adults. *Special Care in Dentistry*, 40(3), 329-331. doi: 10.1111/scd.12465.

The day after the family dinner, **Laurette** noticed she could not taste or smell anything and went for a COVID-19 test.

◇ **Day 1 - You are on the team in the COVID TESTING CENTER.**

Laurette age 42 teaches 5th grade in a public school and has been working remotely for a year. She is waiting to get an appointment for her first COVID-19 vaccine dose. You give Laurette a rapid and PCR test. Her COVID-19 rapid test was positive, and her PCR test results 3 days later was also positive.

Read: Ren, Y.F., Rasubala, L., Malmstrom, H., & E. Eliav. (2020). Dental Care and Oral Health under the Clouds of COVID-19. *JDR Clinical and Translational Research*, 5(3), 202-210. doi: 10.1177/2380084420924385.

What do you tell Laurette about the loss of taste and smell?

1. What percent of patients experience loss of taste/smell?
2. Is this an early or late sign?
3. Why would this be considered a COVID-19 alert?
4. Why is the tongue a considered a possible site of initial infection?
5. What type of cells exist on the tongue?

Review the CDC Guidelines (2021) for asymptomatic and symptomatic patients:
<https://www.cdc.gov/mmwr/volumes/69/wr/mm695152a3.htm>

What do you tell Laurette about the rapid test?

6. How soon are the rapid test results available?
7. How accurate are the rapid test results?
8. When is the PCR test necessary?

COVID-19 rapid tests are inexpensive and fast but sometimes give incorrect results*

1 in 5 patients with symptoms and confirmed COVID-19 received a negative rapid antigen test result

People with symptoms and a negative rapid test should

- Get a confirmation (RT-PCR) test
- Wear a mask
- Stay home in a separate room

* 1,098 paired nasal swabs collected at 2 universities in Wisconsin, September 28–October 9, were tested using Sofia SARS Antigen FIA and compared to RT-PCR/viral culture results.

CDC.GOV bit.ly/MMWR123120 MMWR

Grandma Collins and Carla are *fully vaccinated*.

What do you tell Grandma Collins and Carla?

9. What should they do if they continue to have no symptoms?
10. What should they do if they develop symptoms?
11. Do they have to quarantine?

◇ **Day 4 - You are on the team in the DIABETIC CLINIC.**

Joe age 68 is single, on disability, obese, and has hypertension and poorly controlled Type 2 Diabetes. He is reluctant to get the COVID-19 vaccine. He had been diagnosed with periodontal disease but has not been treated for this. He is on SSI and Medicare/Medicaid with no dental benefit.

Read: Bao, L., Zhang, C., Dong, J., Zhao, L., Li, Y., & Sun, J. (2020). Oral Microbiome and SARS-CoV-2: Beware of Lung Co-infection. *Frontiers in Microbiology*, 11, 1840. doi: 10.3389/fmicb.2020.01840.

Read: Coke, C.J., Davison, B., Fields, N., Fletcher, J., Rollings, J., Roberson, L., ... & Gangula, P.R. (2021). SARS-CoV-2 Infection and Oral Health: Therapeutic Opportunities and Challenges. *Journal of Clinical Medicine*, 10, 156. <https://doi.org/10.3390/jcm10010156>

Read: [COVID-19: Vaccine Hesitancy Case Study #1](#)

Read: Haber, J., Hartnett E., Hallas D., Dorsen, C., Lange-Kessler J., Lloyd, M., ... & Wholihan D. (2015). Putting the mouth back in the head: HEENT to HEENOT. *American Journal of Public Health*, 105(3), 437-441. doi: 10.2105/AJPH.2014.302495.

What do you tell Joe about COVID-19, diabetes, hypertension and obesity, and their relationship to oral health?

12. What co-morbidities are associated with more severe COVID-19?
13. Why do researchers believe that patients with diabetes are more likely to experience severe symptoms and complications than patients without diabetes due to COVID-19 infection?
14. What do researchers believe as to why patients with hypertension are at increased risk?
15. What do researchers believe as to why obesity is related to increased risk?
16. Why is it important to use the HEENOT approach with Joe?

◇ **Day 5 - You are on the team in the PRIMARY CARE CLINIC.**

Mike age 44 is married to Laurette and is an EMT. He is a smoker. He had COVID-19 back in April in the beginning of the pandemic. He is continually tired, has no strength and is considered “a COVID long hauler”. He wears a mask 12 hours a day at work and has developed bad breath, receding gums, and dry mouth. He has halitosis and cheilitis, and recently one of his front teeth fell out without any bleeding.

Read: *Caring for Your Teeth During COVID-19. Oral Health Nursing Education and Practice (OHNEP).* At: <http://ohnep.org/sites/ohnep/files/Caring-For-Your-Teeth-Update-2021.pdf>

Read: *Express Dentist. Special Report: The Real Dangers of Mask Mouth.* Retrieved from: <https://expressdentist.com/mask-mouth/>

Watch: *Medscape. (2020). Long-hauler COVID Clinics Are Open, Skepticism Lingers.* At:

https://www.medscape.com/viewarticle/938121?src=mkm_covid_update_201008_mscpedit_&uac=254868PX&impID=2609924&faf=1#vp_2

Watch: *PBS News Hour. (2021). Medical Community Scrambles to Understand COVID-19 “Long Haulers”.* At: <https://www.pbs.org/newshour/show/medical-community-scrambles-to-understand-covid-19-long-haulers>

Read: Sinjari, B., D'Ardes, D., Santilli, M., Rexhepi, I., D'Addazio, G., Di Carlo, P., ... & Cipollone, F. (2020). SARS-CoV-2 and Oral Manifestation: An Observational, Human Study. *Journal of Clinical Medicine*, 9, 3218. doi:10.3390/jcm9103218.

What do you tell Mike about “long effects of COVID-19”, smoking and their relationship to oral health?

17. What co-morbidities are associated with more severe COVID-19?
18. What is the possible cause of lost teeth in COVID-19?
19. Should Mike get the COVID-19 vaccine?

What do you tell Mike about the importance of caring for his teeth during COVID-19?

20. What is the relationship between halitosis and COVID-19?
21. What are the symptoms of Mask Mouth?
22. What are the recommendations for Mask Mouth?
23. Why is it important to use the HEENOT approach with Mike?

◇ **Day 6 - You are on the team in the PEDIATRIC CLINIC.**

Tanisha age 13 attends hybrid school and has braces, and was unable to see the dentist for adjustments for 4 months. She was able to have teledentistry appointments. She had a broken wire which caused pain and was instructed to apply orthodontic wax. Her braces removal is now delayed for 4 months and won't be off in time for her graduation next year which was the plan.

Read: Sharan, J., Chanu, N.I., Jena, A.K., Arunachalam, S., & Choudhary, P.K. (2020). COVID-19 – Orthodontic Care During and After the Pandemic: A Narrative Review. *Journal of Indian Orthodontic Society*, 54(4), 352-365. doi: 10.1177/0301574220964634.

Read: *Special Care for Your Braces During COVID-19. Oral Health Nursing Education and Practice (OHNEP).* At: <http://ohnep.org/sites/ohnep/files/Special-Care-Braces-COVID.pdf>

What do you tell Tanisha about the importance of caring for her teeth during COVID-19?

24. How should she care for her teeth with braces during COVID-19?
25. Why is important to give special attention to mouth care when wearing masks?

26. Why is it important to use the HEENOT approach with Tanisha?

Troy age 5 attends preschool. He wears a mask all day but is allowed to remove it for snack, lunch and outdoor playtime.

What do you tell Troy's parents about the importance of caring for his teeth during COVID-19?

27. What do you tell Troy and parents about brushing teeth?

28. What do you advise for fluoride varnish (FV)?

29. What do you advise for mask wearing?

COVID-19: OrAll in the Family

Answer Sheet

1. About 50% of all COVID-19 patients report loss of taste and smell.
2. It occurs in the early stages of the disease, before fever and other symptoms, and is persistent.
3. Since loss of taste and smell occur early in COVID-19, this sign should serve as an alert to get tested for COVID-19.
4. Although the underlying mechanism is unclear, the loss of taste and smell has led to the hypothesis that the oral cavity, particularly the tongue, might be the site of initial infection and is persistent.
5. The tongue is the taste organ where 96% of oral ACE2 positive cells reside. Hand to mouth contact could be the route of infection.

6. The rapid test is an antigen test and gives results in 15 minutes.
7. The results are less accurate. In symptomatic patients, the results are 80% accurate, but in asymptomatic patients, results are only about 40% accurate.
8. Because of the inaccuracy of the rapid test, it must be confirmed with the more accurate PCR test.

9. If you continue to have no symptoms, stay home and isolate for 10 days.
10. If you develop symptoms, you must isolate from others for at least 10 days since symptoms first appeared **and at least** 24 hours with no fever without fever-reducing medication **and until** other symptoms of COVID-19 are improving.
11. Due to recent exposure, you must quarantine until PCR test results are back.

12. COVID-19 infection is more serious in patients with co-morbidities such as diabetes, obesity and hypertension.
13. Hyperglycemia facilitates the virus entry into the cells since ACE2 and virus both need glucose for their function.
14. Researchers believe that patients with hypertension may be at increased risk due to the ACE inhibitor medications used to treat their hypertension.
15. Obesity promotes chronic inflammation.

16. It is important to use HEENOT for oral health history and exam to assess oral health and provide oral hygiene information and referral for a teledentistry appointment. Use tip sheet: “Caring for Your Teeth During COVID-19” (pages 10-11)

17. Smokers are at higher risk of developing severe COVID-19 outcomes and death.

18. Researchers suggest that the vascular problems associated with COVID-19 may cause a lack of blood supply to the teeth and they fall out without any bleeding.

19. Yes, you should be vaccinated even if you already had COVID-19. Experts do not yet know how long you are protected from getting sick again after recovering from COVID-19.

20. COVID-19 infection is highly prevalent in subjects with halitosis. The studies suggest that SARS-CoV-2 affects the upper side of the tongue epithelial cells. The proposed alteration is due to the high expression of ACE 2 receptors in the dorsal part of the tongue and around the oral mucosa. Evidence suggests that the mouth is a powerful source of SARS-CoV-2 infection and transmission.

21. Mask Mouth is related to bad breath, receding gums, dry mouth, halitosis and chelitis. Mask wearing decreases oral intake resulting in dehydration which can cause all of the above.

22. He needs to take regular breaks, good oral hygiene, and make sure mask is clean – wash or change every day.

23. It is important to use the HEENOT approach with Mike because he is experiencing tooth loss and needs to prevent further tooth loss. Given the risks to health that tobacco use causes, WHO recommends quitting tobacco use.

24. Use tip sheet: “Caring for Your Braces During COVID-19” (page 12)

25. Many teens are skipping brushing their teeth because they feel it is not necessary since they are wearing a mask and no one will smell their breath.

26. It is important to use HEENOT for oral health history and exam to assess oral health and provide oral hygiene information. Assure patient that return to dentist is safe.

27. It is important for Troy to use fluoride toothpaste and brush twice a day for 2 minutes. He should use a pea-size amount of toothpaste and his parents should supervise his teeth brushing and assist until he is 6 or 7 years old. Use tip sheet: “Healthy Habits for Happy Smiles” (pages 13-14)

28. He should continue to receive FV every 6 months either at the PCP or dentist. It is safe to go back to the dentist.

29. Mask breaks are important. Masks should be cleaned and changed every day.

Caring for Your Teeth During COVID-19

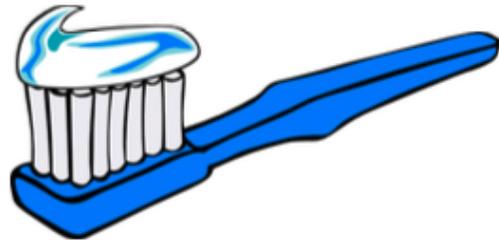
Oral health is directly linked to your overall health. Bacteria thrive in the mouth as it is a perfect environment for them to grow and can cause tooth decay and periodontal disease. Bacteria can enter the bloodstream and contribute to health problems in other parts of the body.

Dental offices across the U.S. have reopened. It is safe to make an appointment for your regular dental cleaning and check-up. With or without a dental visit, it is important to maintain an at-home oral hygiene regimen to prevent oral health problems.

Tools of the Trade

Toothbrush

Use a toothbrush with soft bristles.
Replace toothbrush or electric toothbrush head every *3 months*.
Do not share toothbrushes and other mouth care tools.



Toothpaste

Avoid toothpastes with harmful chemicals, namely *sodium lauryl sulfate (SLS)* and artificial colors and sweeteners.

Floss

Use floss to remove bacteria below the gum line and sides of *all* teeth – do not neglect teeth and gums at the back of mouth.
To promote gum health, you can also try a gum massaging tool to increase blood flow to gum tissue



Tips for Teeth, Tongue and Gums



Consistency is key. Brush teeth first thing in the morning and before you go to bed at night.

Brush your tongue – it houses most of the harmful bacteria in your mouth.



Rinse with a warm saltwater mixture to reduce mouth bacteria, soothe gums and reduce tooth sensitivity.

Avoid hard, sticky foods. It is important to be careful with your teeth when seeing the dentist is not an option.



When should I call my dentist?

Dental offices are open and eager to welcome you back for preventive, restorative and emergency oral health care.

Many dentists are still available over the phone or have adopted telehealth practices to virtually communicate with patients. Your dentist can assess your problem and determine if you need to visit the office.



Sources:

Cipollina, J.E. (2020, April 1). Oral Health Home Habits for Healthy and Happy Smiles. *All 4 Oral Health*. <https://all4oralhealth.wordpress.com/2020/04/01/oral-health-home-habits-for-healthy-and-happy-smiles/>
PR Newswire. (2020, April 28). Oral Health Expert Dale Audrey, R.D.H., of Oral Fitness Inc. Advises People on How to Care for Their Teeth When They Cannot See a Dentist. *PR Newswire*. <https://www.prnewswire.com/news-releases/oral-health-expert-dale-audrey-rdh-of-oral-fitness-inc-advises-people-on-how-to-care-for-their-teeth-when-they-cannot-see-a-dentist-301048591.html>.
Fleischman, T. (2020, April 29). 7 tips to keep up your dental hygiene during stay-at-home orders | Expert Opinion. *The Inquirer*. <https://www.inquirer.com/health/expert-opinions/dental-hygiene-at-home-coronavirus-quarantine-keep-teeth-healthy-20200429.html>.

Special Care for Your Braces During COVID-19 Common Issues with Orthodontic Appliances

Orthodontic offices have reopened, but it may not be possible for you to make an appointment if you have an issue with your braces. Our care tips provide safe methods for caring for your braces until you are able to visit your orthodontist.

! My brackets are causing sores on my lips and cheeks.



Place a small amount of orthodontic wax over the offending bracket or broken wire. It is recommended that you avoid oily and spicy foods until the sores are healed.

! I keep getting food stuck in my brackets and it is causing irritation on my lips and cheeks.



With braces and other orthodontic appliances, it is especially important to maintain proper oral care. Use an interproximal brush or Waterpik® to dislodge food stuck in brackets. Do not use sharp objects to dislodge food.

! One of my wires is poking out of my bracket.



Place a small amount of orthodontic wax over the offending bracket or broken wire. Do not attempt to cut or adjust the wire.

! My retainer broke.



If your retainer or other removable orthodontic appliance breaks, do not continue using. Keep the piece in water until next orthodontic visit.

Source: Sharan, J., Chanu, N.I., Jena, A.K., Arunachalam, S., & Choudhary, P.K. (2020). COVID-19 – Orthodontic Care During and After the Pandemic: A Narrative Review . Journal of Indian Orthodontic Society, 54(4), 352-365. doi: 10.1177/0301574220964634.

Healthy Habits for Happy Smiles



Brushing Your Child's Teeth

Brushing is one of the main ways you can keep your child's teeth healthy. You should brush your child's teeth with fluoride toothpaste twice each day to help prevent tooth decay (cavities). Begin brushing as soon as your child's first tooth begins to show.



School readiness begins with health!



Tips for brushing your child's teeth:

- Brush your child's teeth after breakfast and before bed.
- Use a child-sized toothbrush with soft bristles and fluoride toothpaste.
 - For children under age 3, use a small smear of fluoride toothpaste.
 - For children ages 3 to 6, use fluoride toothpaste the size of a pea.
- Young children like to do things by themselves. It's good to let children brush their teeth while an adult watches. But children under age 7 or 8 cannot brush their teeth well yet. An adult needs to brush the child's teeth too.
- Find a position where your child is comfortable and you can see your child's teeth while you brush. For example, sit on the floor with your baby's or young child's head in your lap. Or stand behind your child in front of the mirror.
- Gently brush your child's teeth using small circles. Brush all surfaces of the teeth, including the insides and outsides.
- After brushing, have your child spit out the remaining toothpaste but not rinse. The small amount of toothpaste that stays in your child's mouth is good for the teeth.
- If you are having trouble brushing your child's teeth, use a timer, a counting game, or a song while brushing. You can also ask the staff at your child's dental clinic for help.



Use a smear for children under age 3.



Use a pea-size amount for children ages 3 to 6.

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National Center on Early Childhood Health and Wellness. 2016. *Healthy Habits for Happy Smiles: Brushing Your Child's Teeth*. Elk Grove Village, IL: National Center on Early Childhood Health and Wellness.

Photo requiring credit: <http://www.wikihow.com/Clean-Toddler's-Teeth> (front page, top)



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