

# Items to Consider for Treatment of COVID-19 Emergency Patients

Updated 4-14-2020

**If you believed you could breathe in and/or touch virus particles that could kill you—  
*would you do the following?***

## Personal protection

- Hair/head covering
- Eye covering fitted
- Face mask NIOSH N95 rated
- Disposable gown with high neck, long sleeves, full-body covering, pants (wash, sterilize, or toss)
- Shoe covering
- Gloves

## At front door to office

- Prior to patient arrival, arrange with the patient to leave all accessory items (phone, wallet, purse, etc.) in car (arrange for payment over phone)
- Ask that the patient arrive alone, unless the patient needs special assistance/support
- Cover entry door handles with barrier, both inside & outside
- Take patient temperature & put mask on patient to wear until seated in operatory
- Disinfect patient hands & have patient glove. Ask patient to remain gloved throughout treatment in operatory. (Make sure patient does not have a latex allergy. Stock non-latex gloves!!)

## Bring immediately into operatory (no wait) with operatory prepared as following

- Chair fully plastic barrier covered & chair handles fully covered
- Plastic barrier cover all surfaces possible
- Plastic barrier cover x-ray head & arm, control button, & computer
- Have operatory stripped of all items not essential for each specific treatment

## Treat as simply as possible

- DDS & Assistant to treat patient plus one additional person that avoids patient contact & acts as a runner to get any items not laid out in operatory
- All clinicians wear eye protection, N95 face mask, operating gloves, protective clothing
- Antibiotic (to get patient out of pain)
- Endodontic procedure, only to point where you can stop (ie: antibiotic, incise & drain)
- Extraction if necessary (make sure high velocity suction tip is very close to treatment site)
- IRM or other fast, easy interim restorative
- Following treatment put mask on patient, before they leave the operatory
- Have lined garbage can located conveniently beside operatory chair

## Out the door

- Have patient leave office with mask & gloves on. Patient can decide if they want to take them off once out of office. (Have a plastic lined trash can located conveniently outside of office for patient to deposit mask &/or gloves, if they choose)

## Disinfect operatory

- Remove mask & gloves aseptically (touch mask at unused edges only – remove gloves inside out touching edge of cuff only). Deposit in orange hazardous waste bag
- Apply BioSURF or Lysol on hands (paying special attention to fingertips and around & under fingernails) until dripping wet and wait until it has evaporated (40+ seconds)
- Put on new gloves & mask
- Remove barriers from operatory and radiographic equipment
- Apply generous layer of BioSURF on ALL surfaces & stay in the operatory and monitor surfaces to keep wet for 3 minutes. Scrub surfaces with the BioSURF to clean. Reapply BioSURF for 3 minutes, then wipe with new, clean paper towel to remove any streaking and excess.

## Disinfect self

- Remove mask & gloves aseptically (touch mask at unused edges only – remove gloves inside out touching edge of cuff only). Deposit in orange hazardous waste bag
- Apply BioSURF or Lysol on hands and fingertips until dripping wet and wait until it has evaporated (40+ seconds)
- Put on new mask and gloves
- Remove all your protective clothing aseptically & deposit in plastic bag for laundering in hot Clorox wash or deposit in hazardous waste bag if disposable
- Remove mask & gloves aseptically (touch mask at unused edges only – remove gloves inside out touching edge of cuff only). Deposit in orange hazardous waste bag
- Apply BioSURF or Lysol on hands and fingertips until dripping wet and wait until it has evaporated (40+ seconds)

**ZIRCONIA –  
WHAT YOU NEED TO KNOW**

## ZIRCONIA 2020

### Critical Facts Clinicians Need When Helping Patients Make Choices

<u>Definition of Terms</u>	<u>Mol % Yttria Content</u> *	<u>Weight % Yttria Content</u> *	<u>% Tetragonal Phase Present</u>	<u>% Cubic Phase Present</u>	Source Company's Claimed Strengths●		Some Example Brand Names & Company Source
					Flexural Strength	Fracture Toughness	
<b>3Y zirconia</b>	Contains 3 mol % yttria*	Contains 4.5—6.0% yttria*	100% tetragonal phase present	0% cubic phase present	≥1,100 MPa (Megapascals)	≥5.0 MPa√m (K1C)	<ul style="list-style-type: none"> <li>• BruxZir Original 2009 (Glidewell)</li> <li>• BruxZir HT (Glidewell)</li> <li>• ZirCAD LT (Ivoclar)</li> <li>• ZirCAD Prime Core (Ivoclar)</li> <li>• ZirLux 16+ (Zahn Dental)</li> </ul>
<b>4Y zirconia</b>	Contains ≥4 mol % yttria*	Contains 6.0—8.0% yttria*	~ 75% tetragonal phase present	~ 25% cubic phase present	≥800 MPa (Megapascals)	≥3.5 MPa√m (K1C)	<ul style="list-style-type: none"> <li>• 3M Chairside Zirconia (3M)</li> <li>• ArgenZ HT+ (Argen)</li> <li>• Lava Esthetic (3M)</li> <li>• ZirCAD MT (Ivoclar)</li> </ul>
<b>5Y zirconia</b>	Contains ≥5 mol % yttria*	Contains 9.05—10.0% yttria*	~ 50% tetragonal phase present	~ 50% cubic phase present	≥650 MPa (Megapascals)	≥2.1 MPa√m (K1C)	<ul style="list-style-type: none"> <li>• BruxZir Anterior (Glidewell)</li> <li>• BruxZir Esthetic (Glidewell)</li> <li>• CubeX<sup>2</sup> (Dental Direkt)</li> <li>• Katana Block (Kuraray Noritake)</li> <li>• Katana STML (Kuraray Noritake)</li> <li>• ZirCAD Prime Incisal (Ivoclar)</li> </ul>

\* **Yttria** = a rare earth element commonly added originally to zirconium oxide to stabilize the molecular structure in its strongest tetragonal configuration; the same rare earth recently increased to change refractive index & give zirconia more translucence, but results in significant strength reductions (See above).

● **Claimed Strengths** = Use of different test methods & manipulation techniques cause important variations in strength numbers produced by laboratory tests in various test facilities. Clinical performance over time in a wide variety of situations is the only truly reliable test of durability.

**Definition of symbols** = ≥ means “greater than or equal to”; ≤ means “less than or equal to”.

# Esthetic Monolithic Crown Materials in TRAC Research Long-Term Clinical Study – 2020

KEY:  Zirconia Ceramic  Glass Ceramic  Polymer Containing  Zr Substructure + Veneer Ceramic

	Brand (Alphabetical by Company)	Source Company	Source Company's Claimed Values in 2019		
			Flexural Strength (MPa)	Fracture Toughness (MPa√m)	Zirconia Mol% yttria
1.	3M Chairside Zr	3M	1000	>6.4	4Y
2.	Alien HT	Alien Milling	1200	?	3Y
3.	Alien Multi-Layer	Alien Milling	1100	?	3Y
4.	ArgenZ HT+	Argen	1250	3.5	4Y
5.	BruxZir Anterior	Glidewell	650	2.1	5.5Y
6.	BruxZir Esthetic	Glidewell	870	2.7–3.1	4.7–4.9Y
7.	BruxZir NOW	Glidewell	800	5.0	3Y
8.	BruxZir Shaded	Glidewell	1100+	5.0	3Y
9.	cubeX <sup>2</sup>	Dental Direkt	720	4.8	5Y
10.	Katana Block	Kuraray Noritake	----	----	5–5.5Y
11.	Katana STML	Kuraray Noritake	748	3.2	5–5.5Y
12.	Lava Esthetic	3M	800	>4.0	4Y
13.	Pavati Z40.1	CCRI / Sirona	1100	5.0	3Y
14.	ZirCAD LT	Ivoclar Vivadent	1243	5.1	3Y
15.	ZirCAD MT	Ivoclar Vivadent	850	3.6	4Y
16.	ZirCAD Prime (contains 2 Zr formulations)	Ivoclar Vivadent	1200 = 3Y (core) ? = 5Y (incisal)	5.1 = core ? = incisal	3Y core 5Y incisal
17.	Zirlux 16+	Zahn	1200+	5.0+	3Y

KEY:  Zirconia Ceramic   
 Glass Ceramic   
 Polymer Containing   
 Zr Substructure + Veneer Ceramic

			Source Company's Claimed Values in 2019		
	Brand (Alphabetical by Company)	Source Company	Flexural Strength (MPa)	Fracture Toughness (MPa√m)	Material Category
18.	Celtra DUO	Dentsply	210 polished only 370 with firing	?	Glass ceramic 10% Zr & lithium silicate
19.	e.maxCAD	Ivoclar Vivadent	>400	2.25—2.5	Glass ceramic Lithium disilicate
20.	Camouflage NOW	Glidewell	192.62	?	Polymer containing
21.	CeraSmart	GC America	270	?	Polymer containing
22.	Enamic	Vita	150-160	1.5	<i>Unique</i> Polymer containing (86% ceramic scaffold)
23.	Lava Ultimate	3M	200	2.0	Polymer containing
24.	PressCeram veneer ceramic over Metoxit 3Y Zirconia	Swiss NF – Canada	≥1,000=substructure ≤100=veneer ceramic	≥5.0=substructure ≤1.0=veneer ceramic	Veneer ceramic over Zr substructure

**NEW “HOT TOPIC” –  
THERAPEUTIC  
RESTORATIVE MATERIALS**

## 2020 Therapeutic Materials that Remain in the Oral Cavity Indefinitely in TRAC Research Study

TRAC's Material Category	Brand	Company	Product Description	Time in TRAC Studies
<b>Antibacterial</b>	• Infinix	Nobio	Antimicrobial resin-based composite for universal use.	Starts Spring 2020
<b>Buffer Capacity</b>	-----	-----	-----	-----
<b>Calcium &amp; Phosphate Ion Releasing</b>	• Activa	Pulpdent	Claims to release fluoride, calcium, & phosphate ions to stimulate apatite formation & remineralization at the material-tooth interface. <i>(TRAC Research could not confirm these claims <i>in vivo</i> or <i>in vitro</i>.)</i>	3.5 years
	• Predicta Bulk (HV & LV viscosities)	Parkell	Claims to release fluoride, calcium, & phosphate ions to stimulate apatite formation & remineralization at the material-tooth interface. <i>(TRAC Research working on validation now.)</i>	Less than 1 year
<b>High Fluoride Ion Releasing</b>	• Equia Forte Fil	GC	<u>Conventional glass ionomer</u> releases fluoride ion in high amounts and over long period of time (years) & seals at material-tooth interface for at least 3 years. <i>(TRAC Research has validated above both <i>in vivo</i> and <i>in vitro</i>.)</i>	3.5 years
	• Equia Forte HT Fil	GC	Same as Equia Forte above, but translucency and strength improved. <i>(TRAC Research working on validation now.)</i>	Less than 1 year
	• Fuji Automix LC	GC	<u>Resin-modified glass ionomer</u> releases fluoride ion in high amounts and over long period of time (years), and does not require triturator for mixing. <i>(TRAC Research working on validation now.)</i>	Less than 1 year
	• Ketac Universal	3M	<u>Conventional glass ionomer</u> using nanotechnology releases fluoride ion in high amounts and over long period of time (years) & seals at material-tooth interface for at least 3 years. <i>(TRAC Research has validated above both <i>in vivo</i> and <i>in vitro</i>.)</i>	3.5 years
	• Smart Advantage	Elevate	<u>Conventional glass ionomer</u> with opaquing added to minimize dark stain of silver diamine fluoride (SDF) when it is applied first to "arrest" caries. Releases fluoride ion. <i>(TRAC Research working on validation now.)</i>	Less than 1 year



**DENTAL CARIES**  
**NEW INSIGHTS**

# Are you at risk for **type 2 diabetes?**

- 1. **How old are you?** ..... 
  - Less than 40 years (0 points)
  - 40-49 years (1 point)
  - 50-59 years (2 points)
  - 60 years or older (3 points)
  
- 2. **Are you a man or a woman?** ..... 
  - Man (1 point)      Woman (0 points)
  
- 3. **Do you have a mother, father, sister or brother with diabetes?**..... 
  - Yes (1 point)    No (0 points)
  
- 4. **Do you have high blood pressure or are you on medication for high blood pressure? ....** 
  - Yes (1 point)    No (0 points)
  
- 5. **Are you physically active?**..... 
  - Yes (0 points)    No (1 point)
  
- 6. **Are you overweight? *See chart on reverse side***..... 
  - Not overweight or obese (0 points)      Overweight (1 point)
  - Obese (2 points)                              Extremely obese (3 points)

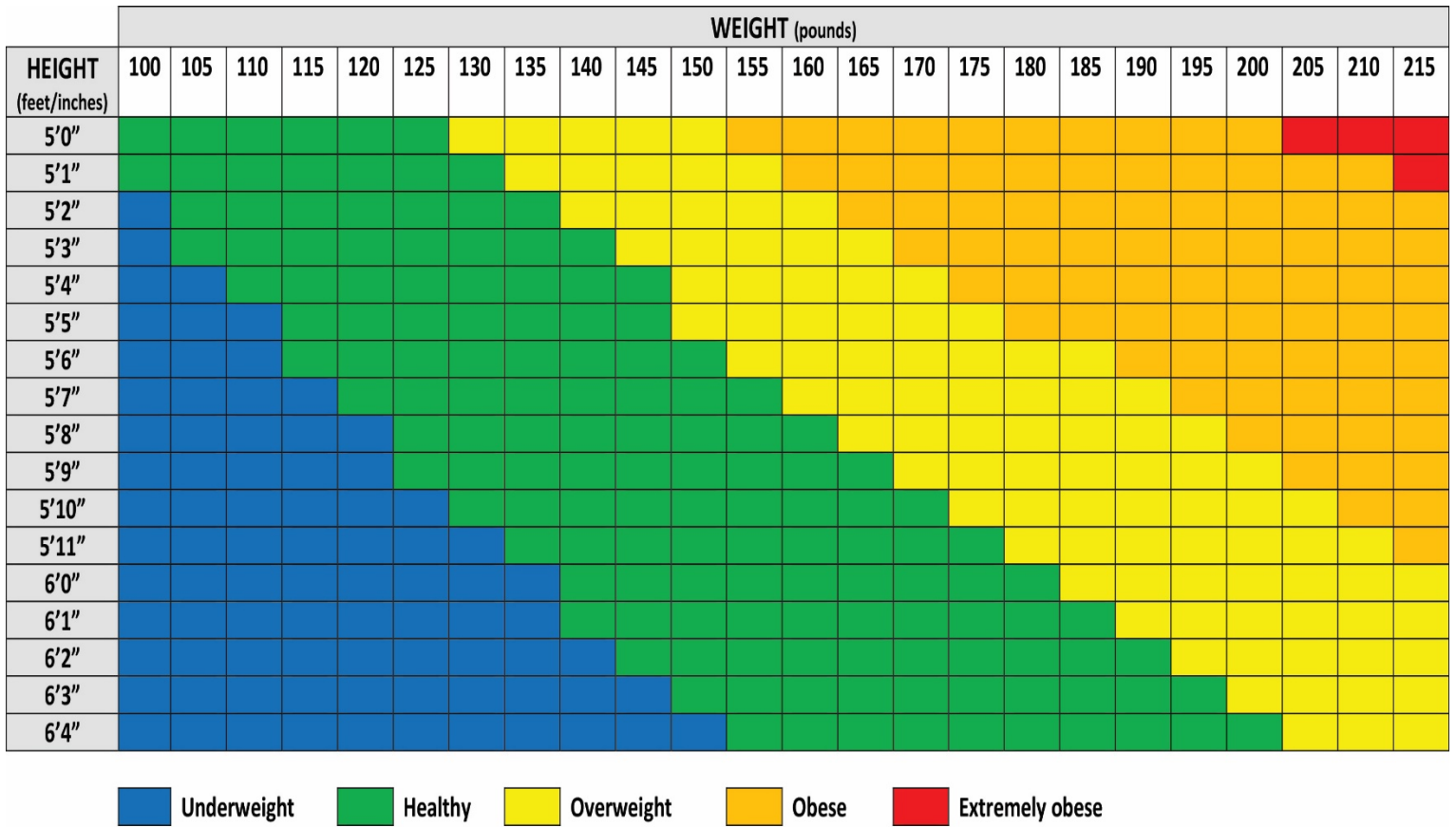
**ADD UP  
YOUR SCORE**

## **If you scored 5 or higher:**

You are at increased risk for type 2 diabetes. However, only your doctor can tell for sure if you do have type 2 diabetes or prediabetes. Talk to your doctor.

Type 2 diabetes is more common in African Americans, Hispanics/Latinos, Native Americans, Native Hawaiians, Pacific Islanders, and Asian Americans. Although higher body weight increases diabetes risk for everyone, Asian Americans are at increased risk at lower body weight than the rest of the general public (about 15 pounds lower).

Adapted from Bang et al, Ann Intern Med  
151:775-783, 2009  
Original algorithm was validated without  
gestational diabetes as part of the model.



**Obesity definitions using Body Size defined by waist measurements:**

**Overweight** .....If waist 37 inches or more for Male; 31.5 inches or more for Female.

**Obese** ..... If waist 40 inches or more for Male; 35 inches or more for Female.

**Extremely obese**.....If waist 50 inches or more for Male; 49 inches or more for Female.

Adapted from Bang et al, Ann Intern Med 151:775-783, 2009  
 Original algorithm was validated without gestational diabetes as part of the model.