The 30-Minute Crown Prep

It doesn’t happen overnight. Most times we never realize we’ve done it. Some of us have tried to improve, but all of us surely realize that at some juncture we reach the point of maximum capacity due to clinical speed. When I was practicing every day, we would routinely have various offices visit us. I remember being stopped by one of the doctors who gave me a blow by blow of the procedure I had just finished. He said: “Do you realize that your patient arrived at 8, and forty minutes later you had prepped number 19 for a crown, done a root canal, built up the tooth, taken the impression and seated the temporary, taken photos pre-op and post-op along with digital x-rays for the insurance, and the patient was out of the chair and paying at the front desk at 8:41?” My answer was: “I guess so, that’s about how long it takes most times. I’m not trying to hurry; it just ends up taking about that much time.” Now I’m not saying I never run into an endo that might take longer, but the average one is going to take 20-30 minutes, and we can do a single crown prep in under 30 minutes any day of the week.

If you think about it, assuming that we have perfected everything else in a dental practice, clinical speed will ultimately limit the amount of production we can do in a day. If it takes you an hour to do a crown, and you had the perfect day of one crown per hour or about 8 crowns, the most you could ever produce on that perfect day would be 8 times the fee for a crown. That’s a lot, but my office would routinely do 1.5 to 2 times that amount (with kids, 4 hygienists to check, and a variety of emergencies and various procedures) during an average day. So how do you consistently lower the amount of time it takes to do the best crown prep you can do? You decide to do it. You make it a priority.

Four years ago there was a multi-dental school research project involving the amount of time that the average senior dental student needs to actually prep for a crown. After all the research, they found it took an average of 4 minutes after anesthesia to actually prepare the tooth for a crown. Everything else was just cleaning up and taking impressions and placing the temporary, which can take a dental student a long time. So why does it take the average dentist somewhere south of 60 minutes to
do the whole procedure? I have seen them take an hour and a half to two hours for just one crown. What could they possibly be doing for that length of time? You could vaporize an entire tooth in about 90 seconds with the right burs and an electric hand piece.

Let’s take it step by step, and walk through each stage of a 30-minute crown prep. Now I am not suggesting that this amount of time or any other time is the benchmark you should strive for, but I would have to say that many of you just piddle around for way too long. I guarantee that a patient would prefer a shorter appointment compared with a longer one. You should strive to improve your productivity with speed that leads to excellence. If you charge $1000/crown and it takes you an hour for the prep appointment and 30 minutes for the seat, you are producing at the rate of $666.66/hour. Shorten the prep to 40 minutes and the seat to 20 minutes and you now are producing at $1000/hour: Big difference, big production, and bigger profit. That’s a raise of about 35%. That’s an extra 30 minutes a day per crown that you could add even more production. This is what makes a good practice great in the profitability arena.

• **Prior to the appointment:** This would include everything that should have occurred prior to the actual prep appointment taking place. We need to treatment plan and do case presentation so there is no doubt that the patient wants to do the crown, understands why it needs to be done, can afford it, and has been appointed at a time that fits their schedule. Fail on any one of these, and you will have a no show, or an unhappy patient that will not refer to you or follow through with treatment. 99% of the things listed above are performed and controlled by your staff. We can no longer afford to keep marginal staff. Hire for attitude and train them well. Expect results and create consequences for lack of performance. If your staff is not excellent, you won’t even get the opportunity to mess up the relationship. Stop “negotiating” with your employees to make the changes needed to take your practice to the next level.

• **The philosophy of productive dentistry:** Rule one: Always be on time. You are either early or late. There is no way to be just on time. Never being on time says you don’t value the patient or their time. The ripple effect is more cancellations and no-shows, running late on the next patient, increased staff stress, and poor internal referrals. This is always a symptom of poor treatment planning and a lack
of good systems. Be **On Time, Every Time.** Use a tub and tray setup for everything. Everything is covered and nothing is kept in the room. It should take less than two minutes to turn a room. If you will go back into our newsletter archives you can retrieve an article on how to establish an entire tub and tray setup system. If you can’t find it, just email me and I will send it to you. While you’re hunting for the article take a moment and Google Dr. David J. Ahearn or go to [www.desergo.com](http://www.desergo.com) and get an idea of how your operatories should be set up for speed, efficiency, and profit *(watch the morphing operatory video)*. There should never be a time that the assistant would need to leave the room to retrieve something for the crown prep. If that ever happens, it should be added to the setup. Systematize, refine, and continue to improve your setup and systems. Keep in mind that the very act of having to put down in writing what needs to be on each setup is a necessary system in itself. Take the time to develop this and training assistants becomes a non-issue.

- **TIME STARTS NOW:** We have 30 minutes do normal crown prep.

- **Assistant time:** Yes this is included in the 30 minutes for the crown prep. The assistant seats the patient, sets up the computers to the proper patient record, assures all financial arrangements have been done *(this really should have been done prior to binging them back: NO ONE SHOULD MAKE IT TO THE OP WITHOUT HAVING SIGNED FINANCIAL AGREEMENTS OR HAVING PAID!)*, makes sure the informed consent has been signed *(email me and I will send you an incredible informed consent form)*, note in the chart that you have explained the advantages, disadvantages, risks, and alternatives, blood pressure taken, notes that there are “no changes in medical history”, tub and tray setups are in the room, nitrous oxide is placed on patients nose *(we use this 99% of the time)*, headphones given to patient, and topical placed *(we use a topical from Steven’s Pharmacy ([www.stevensrx.com](http://www.stevensrx.com)), closed mouth impression taken of patients tooth to be prepped *(we use an extremely heavy bodied Blue Mousse from Parkell Dental)*, all hand pieces are in place with the proper diamonds and burs *(I would suggest an electric hand piece for speed, torque, and quietness)*, PA x-ray taken pre-op, the shade is taken and set out for me to check, and also a photo pre-op.
• **Doctor time:** Before I go into the actual steps that I take, I need to take a moment and clear up how appointments and scheduling should actually be done. Far too often I see doctors jumping from one chair to another. This is the least productive way of practicing. I routinely checked four hygienists a day, and still saw all of my patients and never ran over time on anyone. When I sat down to numb a patient I never left them until I finished. Clinical speed, systems, and equipment will allow you to do this. Clinical systems will insure that it becomes routine for you. Here is how we do it. I walk in. The patient has already had the topical placed and temporary impression taken, and everything is set up and ready to go. We routinely place our cord before we prep. Try it. You will love the results. We start on time every time. I walk in, and speak to the patient (who by now is already numb from the topical, out of it from the nitrous, and into the music they are listening to), and we begin by numbing them. I would use the IntraFlow HTP Anesthesia Delivery System by Pro-Dec Inc. (*you could also use X-tip or Stabident interosseous anesthesia systems*), and only do a block in rare cases. Any of these systems allows you to deliver less than a quarter of a carpule of anesthetic of choice interosseously to have profound anesthesia within 20-30 seconds for a duration of a little over 30 minutes. There is no numb tongue or cheek. In today’s dental market there is no reason to even use metal for your restorations. Once you make the change you never need to bury a margin below the margin of the gum for bicuspids thru molars. By doing this you can, in most instances, avoid the use of retraction cord and dental blocks. You will routinely hear how wonderful this type of anesthesia is. How they have never been that numb before. You will also find that you couldn’t afford to pay for marketing that gives you the reputation of being quick and painless without a block. The last thing I do is look at the shade the assistant took and make any adjustments in its choice that is necessary. Women deal with color every time they do their makeup and can become great at selecting the proper shades. If this had been an anterior tooth she would have spent time mapping the tooth shade and having our technician add any notes. We would have also taken a photo with a SLR camera for comparison.
• **The Prep.** Michelangelo, when asked how he was able to create those wonderful sculptures, said that the figures had always been there, so all he had to do was chip away what he didn’t want. In every procedure you must imagine or see the finished product before you start. A finished crown prep is a tooth reduced 2mm on the occlusal surface, and 1.5 on the axial surfaces. The finished product looks like a tooth but reduced. There are no sharp line angles. The axial walls are as close to parallel as possible. The occlusion is not a flat tabletop, but is contoured much like the original crown. The goal is to create a smooth prep with parallel walls that create no internal stress within your porcelain from sharp line angles. 9 out of 10 doctors that I visit, and this represents clinicians that speak on cosmetic dentistry, would get a failing grade on their crown preps. I was a lab technician 4 years before I became a dentist. We always had Tenaka trained lab techs working in our in-office lab. I am very particular about what we send out and you should be also. If you think you are actually doing a great job, think again. A great place to start in order to give your lab the best that you can do is to go to Glidewell Dental Lab’s web site: [www.glidewelldental.com](http://www.glidewelldental.com). When the home page opens click on the “Dentist” tab and go to their videos. Find “Rapid anesthesia, Reverse prep, and two-cord impression technique video”. This video is about ten minutes long and the dentist is Dr. Michael DiTolla. I have known him about 12 years and he is a great clinician and great teacher. While the reverse prep is over 30 years old, it offers the finest, most consistent way of getting the perfect margins that you need for all porcelain and PVC crowns that I know of. Watch it and watch it again. Keep in mind that a “good” impression needs to capture about 1mm of the tooth beyond the finish line of the margin. He lists the burs and every dental item he uses. Do it once and I’ll bet your lab tech will call the day after he receives your next prep to just brag on you and to encourage you to send him more work just like this. I follow most of what Dr. DiTolla talks about in his video. I use a Midwest Great White bur for most alloy removal and prep work, and use a KS-1 and KS-2 course diamond to bulk removal in order to finish the prep. One of the biggest mistakes I see doctors make is using 15 different burs for a crown prep. This becomes a huge issue when there is more than one doctor working in an office. Cull down your bur blocks, simplify your procedures, and watch your quality increase.
The minute I numb and replace the hand piece in its hangar, I pick up my hand piece and begin the prep. We used to always use a McKesson medium mouth prop. We currently use the Isolite System which, in addition to a mouth prop, gives you suction and better lighting. We use it to let the patient relax but still be open. Patients that have never used one will always comment on how much more comfortable it was and how little post op soreness is apparent in their jaw. I remove any filling material, decay, and prep in about two to three minutes, without stopping. If my assistant is doing a great job of catching most of the debris, I go ahead and finish the entire prep. While she is rinsing our patient I am grabbing our build up material. We all have our favorites, but I have used a reinforced glass ionomer for the last 10 years. One of the best is a zinc reinforced glass ionomer (by Chemfil Rock or Densply), or a self-mixing nanoparticle resin modified glass ionomer (RMGI) by Ketac Nano Quick. You can use these for primary fillings on kids, compromised older patients, and bases in all composite fillings. You will never have sensitivity or recurrent decay using these. I wrote an article about how to never have composite sensitivity a year ago and you can track it down through our newsletter. Truth is, when you start adequately reducing the occlusion by 2mm and axial walls by 1.5mm, you will seldom if ever need to do a buildup. Reduce the tooth properly and you will never need to adjust them or grind through to the metal on a PVC. The great thing about glass ionomers is that they don’t shrink when cured (other build up materials do, creating internal stress and post op pain). They are dual cure and they cure with an LED curing light completely in 20 seconds. Don’t worry about doing it incrementally, just fill up the void and finish the prep. I would suggest hitting it with a blue rubber cup to make it as smooth as possible. I pick up the Blue Mousse impression the assistant took prior to me entering the room and fill it with Integrity automix from Henry Schein. I place the tray back in the patient’s mouth and make sure they close all the way. It takes about 2-3 minutes. While I wait, I turn and write a short note to the patient on a card from Thayer card company called “the terrific patient card”. I just say: “Thanks for being a great patient. Let me know if you need anything. Please send me two more patients just like you”, and sign it and write in my home phone number, and tell them that it’s my home number before we finish. Do this and they will never call. I turn
back around and remove the tray. I take out the temporary while my assistant rinses the patient. I trim the margins and move back to the patient with the temporary and some Accufilm articulating paper *(Don’t even think about using something else)* to check the bite. She scrubs the tooth with Chlorohexidine and a cotton pellet and rinses again as I finish adjusting the bite and try it in one last time and make any last occlusal adjustment. In this way, I know the bite is good but in contact, the contacts are tight, and the margins are perfect. All my assistant has to do prior to its placement is to polish it. Note: Prior to seating the temporary we always clean it with Chlorohexidine and HemaGlu to decrease any sensitivity or contamination. Same thing when we seat a permanent crown. Not to do so should be malpractice. I grab the light bodied syringed polyvinylsiloxane impression material from my “gun rack” and as I move toward the patient’s mouth, my assistant has the patient open, removes the cord and reflects the check or tongue while drying the tooth *(Keep in mind that you cannot use certain types of retraction cords with certain types of impression materials. I see this happening in a lot of offices. They introduce a chemical in their retraction cord that inhibits the set of the material they are using. Bottom line: Read the instructions before using)*. I squirt the light body around the tooth, and before covering the entire tooth, I let her air disperse the material around the tooth and I cover the rest of the tooth. I then fill the dual arch impression tray *(we use Clinicians Choice metal trays)* with a heavy bodied polyvinylsiloxane impression material. I insert the tray and have the patient carefully close and I make sure the patient is closed all the way and properly articulated. I have the assistant place her hand under the patient’s chin and firmly hold that position so that the patient cannot relax or shift her bite *(This is the number one reason that your crowns are slightly off)*. Failure to keep pressure under their chin will compromise every impression you take. While she does this I quickly break down the impression gun tips and replace them all before leaving. I have finished everything I need to do and the assistant has only to polish and seat the temporary, assuming we have a good impression. There are a couple of things I do with anyone that I inject. I always place one to two cc of Dexamethasone in the buccal fold. It is a steroid that will eliminate post op tenderness and pain. Only insulin dependent patients should not use this because it will disturb their blood sugar. I don’t tell the
patient, I just do it with a little diabetic syringe and a bulk bottle from Schein. If you have trouble with bleeding, a real quick fix is Cut-trol (www.cut-trol.com). This stuff will stop an artery from bleeding. Bad news is that it leaves a dark coagulate that disappears in a day, but for stubborn bleeding use it with a centrex syringe with a tufted applicator on the end. We place dark glasses on every patient in our offices. Another little trick we use is to always take out the old filling and any decay and take another photo and x-ray. These along with all the other photos and x-rays are sent to the insurance company with our “insurance” letter that almost always insures fewer hassles and more approvals. One last thing, I always give the impression we used to make the temporary to the patient to keep up with. In that way, if there is a problem, you don’t have to store, retrieve, or if you have more than one office, which we did, be in the wrong place to even get it. It makes things go quicker in the unlikely event of a lost or fractured temporary.

Hope this helps. If you have any questions, feel free to call. I love talking about clinical procedures and short cuts to quality results.

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PS --- I have asked Max to reproduce an article I wrote several years ago titled “Just One More”. It reiterates the importance of time management and the incredible power of doing just a little more in order to gain tremendous profitability and lower overhead.