Excellence in Digital Photography...
A great way to become a better dentist
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Thank you for choosing to spend your time with us. We know that there are many choices in continuing education and we sincerely want this to be one of the best experiences in dental CE today. Our goal is to help you gain greater understanding, confidence, and skill that will allow you to take your practice to the next level in restorative dentistry.

Please let us know if there is anything we can do to help you in this experience as we learn to take your practice to a higher level with CAD/CAM dentistry. Don’t limit yourself to only doing what you already know. Learn, experience, master, and challenge yourself to provide a new level of care that will stimulate you in your profession while providing your patients with terrific care.

Success is where preparation meets opportunity.

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Excellence in Photography

How do you know how good you are? All of us can say “My patient liked it”. The true analysis of our skills lies in the photographs. Photography is often overlooked as merely a marketing and documentation tool but it would not be an exaggeration to say that photography is a critical part to ultimate cosmetic success. In fact, it may be the single most important factor in our self-critique and in our quest to become better in cosmetics. Excellence in photography...a great way to become a better dentist.

Half day lecture/hands on:
1. What to buy
2. How to set it up
3. What images to take
4. Using photography to become a better dentist
5. Having patients want the kind of work you like to do
6. Playing with the stuff

Photographic Equipment

The equipment you buy should be of quality that is proportional to the quality of work you are trying to do. If your shades don’t match, your margins are rough, and your lab is terrible, purchase a cheap camera that produces overexposed blurred images....it will help hide your work. Trust me, seeing your work close up with an accurate camera can be humbling and humiliating. However, if your quest is for great work, buy a camera system that will capture and tell that meticulous story.

Just as a #25 k-flex file and a few gutta percha points in the hands of a skilled endodontist can lead to a masterpiece, a great photographer can create a wonderful image from almost any camera. However, we dentoids need help. More than individual parts, focus on buying a system that works well together and is consistent in its results. You don’t have to buy the most expensive and latest gizmos to be a very good photographer; like everything else capturing good images takes a little bit of knowhow and a lot of practice. You won’t buy skill.

The basic stuff you will need is as follows:
- An SLR camera, lens, flash
- Retractors
- Warm water
- Mirrors
- Contrastor
- Portrait background

There are many choices and just as many opinions on what to buy. Don’t waste as much money and time on this stuff as I have, buy from a reputable company that stands behind their products and can help you when you can’t figure things out.
**SLR Digital Camera**

Point and shoot cameras are certainly light and easy to use but their general lack of versatility and accuracy keep me from ever recommending them. If you have an ortho type practice and never take images closer than a quadrant, don’t take posterior shots of individual teeth, don’t plan on publishing/teaching, and don’t use a camera to communicate with a lab than a compact camera will probably do. But if you want the versatility and accuracy that comes with higher end cosmetic work, you will need an SLR (Single lens reflex) body. This allows for an interchangeable macro lens to capture close up detail of teeth. They look big and complex, but in dentistry we change very few settings.

Little cameras like the one to the left tend to have little sensors that tend to be less accurate with detail and often color interpretation. Their SLR big brothers usually have a larger more accurate sensor which can make all the difference when trying to match that single central incisor.

There are many good choices in cameras and they change so fast it will make your head spin. At this point stick with Nikon or Canon for high quality bodies with a plethora of accessories that fit. Canon (50, Rebel T2i, 50D…) and Nikon (D90, D300, D700…) control most of the market. Both companies offer cameras that can capture great images with proper set up and arguing which one is better is like arguing politics or religion…seldom is made-up-mind ever changed.

**Lenses**

The 100 to 105mm lens is the classic in medical close up photography because it has the versatility to capture a full portrait as well as ultra- close up single tooth images. It gives us the most accurate flexibility. Forget about “digital” zoom in compact cameras......it throws away important data with each image and is unreliable for accuracy in color and tooth character. Nikon, Canon, and Sigma make the most popular lenses in this category and all produce excellent images.

- 100-105mm focal length most versatile
- Set to full range of motion
- Aperture ring f/stop to maximum setting (if you can)
- Vibration reduction (VR) not needed in our world
- Autofocus if it works, off if it doesn’t (duh)

**Flash**

Many choices here. Just to summarize, light control is the key to great dental images. The flash and how it is used to paramount. The choice is whether or not to let the camera determine the light you need or if you should do it. I only taught for the dentist to do it for years...now, “I see the light”. With improvements in camera metering and flash components, most offices get the most efficient use of their cameras to use “TTL” (through the lens) metering. I believe there are better ways to do it, but not enough difference to warrant the usual confusion.

- For ease of use and good photos for most situations, set Canon flash to eTTL(right image) and set Sigma flash to TTLBL (left image)
- Camera will be set to Aperture priority mode, “Av” for Canon and “A” for Nikon
- Leave camera on f/stop of 22 or 25 for all images except portrait which is about f/5…this changes what is in focus (depth of field) and helps the camera choose lighting amounts
- Forget the detachable point lights like Nikon R1 and Canon MT-24EX
Retractors
They are the key to non-hillbilly images. Use them for all intraoral images. Wet them in the mirror water before inserting...much easier to get in. The plastic ones look better than the old metal ones but can only be cold disinfected.
- Need large end for most adults (certainly all women--- just kidding!)
- Small set for children and some adults
- Self-holding ones are good for anterior and occlusal images

Mirrors
Reflectivity is key here. Stay away from metal mirrors unless the assistant just can’t keep from throwing them. Glass mirrors have a higher reflectivity. Better yet, consider DoctorsEyes mirrors with their “ultrabright” coating...better reflectivity and more accurate color.
- Need an occlusal mirror for good images, size #13 for adults
- Buccal mirror size #15 is classic, some like tapered #16
- Keep from fogging by using warm water

Where to buy: Probably best to by package from dental camera dealer (i.e. www.Photomed.net, Norman Camera, CliniPix) ... they charge slightly more than assembling your own system but knowing there is someone to talk to when there is a problem can be priceless.
- Use “A” or “M” mode – “A” aperture priority mode is simple and requires only changing the “f/stop” as you move closer to the subject ... this controls the light entering the camera which may be the single most important factor in quality image capture
- Understand histograms to make sure your f/stop settings are giving proper exposure
- Set camera to high resolution settings – capture in RAW or high quality (low compression) jpeg images
- Use flash that can control light manually or with “TTL” metering

What image to take
Now that you have all the hardware, what do you use it for? This is certainly subjective, but BE CONSISTENT! Use the same camera, settings, and positions for pre and post op images. Exactly which images are needed is subjective but you should decide what fits your goals and be consistent with every case. There is never a 2nd chance to get pre-op images. Take them on every cosmetic case before doing any final treatment planning.

Why the AACC (American Academy of Cosmetic Dentistry) series? It is a consistent standard for cosmetic cases...they use it as a requirement for submission of cases and never waiver from its format. It is meant to show the excellence in cosmetics that we achieve today...in large part because of the pioneers in cosmetic dentistry from groups like the ASDA (American Society for Dental Aesthetics). They have 12 views that show office great cosmetic work. The following are their 12 views......
AACD series

Nikon D300, Nikon 105mm macro lens, Sigma macro flash.
“A” mode...f/stops 5.6, 25, 51
The AACD series falls short in 2 major areas. First, there is no vertical portrait which is most desirable for marketing and practice promotion. Secondly there are no occlusal images which are important for case documentation, lab communication, and bite enhancements. With these things in mind, we routinely take 16 different images for our initial photographic examination. Don’t let this get too confusing...the intraorals in the AACD series are with the teeth apart so that the incisal character can be seen and the occluding images I have added are with the same settings and distance as the open images. The vertical portrait obviously is just with the camera turned. Showing the top of the head and all of the hair is certainly more emotional and realistic to our patients.

**Consistency is the key**

You never get a second chance to get pre-op images. Just in case you have an off day and the case you are working on turns out to be excellent, wouldn’t it be too bad if you hadn’t documented how ugly the patient was in the beginning?
Orthodontics

For any orthodontic treatment, Invisalign, Essex aligners, or conventional bracketing, full photographic documentation is critical. Never start moving teeth unless you have a base-line of the pre-op condition. The ortho series obviously must include occlusion and profile. Otherwise, there is nothing special about the images. There are many “templates” sold by various software companies (i.e. Kodak) that can help organize the images for you and help in e-mailing and printing.

Lab communication

There may be no better use for the digital camera than to convey information to your lab technician. The more information you give them, the more they can experience the case with you. Send them a CD with all of the pre-op images, the temporaries, the mock-up, and anything else that may help them create a masterpiece.

For shade matching, photograph the entire shade tab first then zoom in to show a close up. Keep the 2 closest shade tabs on the same plane as the teeth and at a slant to reduce glare. A contrastor behind the teeth can add to the accuracy. Remember, do not overly dry the teeth when showing shades. Often it is best to take the images before prepping any of the teeth.
Preparation shades are a key in today's all-porcelain world. The influence of the underlying tooth is undeniable and must be taken into account when the ceramist makes the porcelain. Again, a shade tab on the same plane as the tooth with a slight cant to decrease glare is beneficial. The first image showing the entire shade tab and the second close up.

Portraits
Cosmetic dentistry is an emotional decision. Portraits are often the emotional tie that a patient needs to lay down all that money for your work. They are the key for marketing and to ultimately check the quality of our work. Some dentists absolutely must have the best car, wine, motorcycle, and, of course, photographic equipment. Someone says set up a dedicated portrait studio: “Get a reflector, a couple of umbrella flashes, and some muslins and you’ll capture like a Victoria’s Secret photographer”. Right. If space, time, and skill weren’t involved we might have a chance. Truth is, if you want the absolute BEST, hire a professional photographer to take all of your images. Send them to Glamorshots.

However, many of us have neither the time or space to do these. Certainly reasonable images can be done with the SLR camera systems we already have with very little effort. The camera bodies and even the flash systems we have are versatile enough for intraoral and portrait photography. It just takes a few tricks and stealing of poses. It can be as simple saying something funny to get a natural smile and having the patient copy the pose of a magazine you show them.

- Standard treatment room is sufficient for efficiency over dedicated studio
- Have patient sit up in chair or stand in hallway
- Place felt on wall or use non-glare bulletin board behind patient in the chair
- Make sure camera “white-balance” is set and correct
- Take first smile image from straight in front of patient
- Next do poses … “turn or tip something” … copy magazine poses
- Consider your normal SLR camera with a “normal” flash and a Fong Dome diffusor for nice images very close to a photo studio would produce
- Think about “Portrait Professional 10” to enhance portraits…a very cool software ($60)...much cheaper and smaller than a portrait studio and only takes seconds to make great portraits.
Marketing cosmetic dentistry

Knowing how to do perfect veneers is useless if there aren’t patients willing to have treatment done in your office. Marketing can take many forms and can cost an unlimited amount of money only to give disappointing results. There are high end cosmetic practices in every larger town that uses PR firms to put their practices on TV, radio, and even billboards. While there is certainly the potential for a high return on investment (ROI), the cost may be prohibitive for many practitioners. We will focus on a few basic forms that are fairly inexpensive yet give a high return on the investment dollar.

Internal marketing to your existing patients with your own cases may be the single best way to increase your cosmetic cases in your office. The investment is minimal. Marketing with photography is fairly simple if your results are good. Even if results aren’t “perfect” changes are usually dramatic enough to make patients want the cosmetic dentistry that you like to provide. Purchasing cosmetic dentistry is an emotional experience and anything you can do to “heighten” the emotional experience while remaining professional will increase your case acceptance.

😊 Before and after images given to patient -- printed or digital, their friends and family will see these, refreshes the memory of how bad the smile looked before treatment … can be framed or matted to make more professional looking

😊 Make office portfolio album – prints or digital photo album that can quickly be shown to patients with interest in cosmetic dentistry or placed in reception area to spark interest

😊 Wall art – quality portrait prints of patients done in your office, allows patients the ability to see what you and your staff can do

😊 PowerPoint digital presentation with before and after images of your cosmetic cases – best done in consultation room away from operatory distractions, set to music in room with comfortable chair and dimmed lights create an environment that elevates the mood to say “yes”

Web site development is crucial to many cosmetic offices. Development must be done by a company that makes professional sites and can position the site high in search engines for those surfing for cosmetic practices in your area. There are many factors that influence the positioning in search engines. Layout, wording, content, and host diligence in positioning are all factors. There are many factors influencing the success of the site:
Professional appearance – since we are professionals we need the site to be organized with a look that is proportional to the quality of work you are trying to perform ... have site mirror the look, feel, and image of your practice ... list credentials, affiliations, and advanced training that may separate you from other dentists in your area

Great gallery – taking quality before and after images on all cosmetic cases will give you a portfolio of gallery images that will be the backbone of your site ... the images can be merely before and after portraits or may include close up images explaining treatment performed

Concise information – describe the basics of treatment with some information like expectations, treatment choices, and what they can expect but don’t go into too much detail ... web sites visitors are looked at mainly because of color and photos with detailed information looked at secondarily

Use a company with a portfolio of professional practices – you can use some of them to pattern your site after ... make sure you understand clearly the web site design fee, hosting fees, content update fees, portfolio update fees and how they will position you in search portals

Success is where preparation meets opportunity.
Educational experiences like this help give you the preparation needed to succeed when opportunity arises. Keep learning...materials and techniques seem to change overnight and sharing the experience of other practitioners is invaluable. There are many terrific educational resources today......commit yourself to a life time of learning. By sticking to an organized sequence of treatment and keeping meticulous attention to detail, every practitioner can experience great rewards in cosmetic dentistry. What a great time to practice.

THANK YOU very much for listening during this presentation...it is an honor to be able to share with you.
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Product:   Nikon D90, D700, D300
Manufacturer:  Nikon
Location:  1 Medowlands Place, Rutherford, NJ 07073
Phone:  800.654.6689
Web site:  www.nikonusa.com

Product:   Canon Rebel T1i, 5D, 50D
Manufacturer:  Canon
Location:  1 Canon Place, Lake Success, NY 11042
Phone:  516-328-5000
Web site:  www.canonusa.com

Product:   Cameras, contrastors, retractors
Supplier:  PhotoMed
Location:  14141 Covello St Bldg 7, Van Nuys, CA 91405
Phone:  800.998.7765
Web site:  www.photomed.net

Product:   Cameras, mirrors contrastors
Manufacturer:  Doctorseyes
Location:  1396 Poinsetta Ave, Vista, CA 92081
Phone:  800.200.3594
Web site:  www.doctorseyes.com
www.jlblosser.com

Product:   Photoshop 7.0
Manufacturer:  Adobe
Location:  345 Park Ave, San Jose, CA 95110
Phone:  800.358.9370
Web site:  www.adobe.com

Product:   Spyder 3 colorimeter or Huey
Manufacturer:  ColorVision Datacolor
Location:  5 Princess Road, Lawrenceville, NJ 08648
Phone:  719.325.7050
Web site:  www.colorvision.com

Product:   SeeMore retractors (???)
Manufacturer:  Discus Dental
Location:  8550 Higuera St, Culver City, CA 90232
Phone:  800.422.9448
Web site:  www.discusdental.com

Product:   PowerPoint
Manufacturer:  Microsoft
Location:  One Microsoft way, Redmond, WA 98052
Phone:  800.MICROSOFT (1-800-642-7676)
Web site:  www.microsoft.com

www.onlybatteries.com  AA NiMH batteries
www.elightbulbs.com  5000k bulbs
www.crslight.com  5500k bulbs
www.lightbulbdepot.com  various bulbs