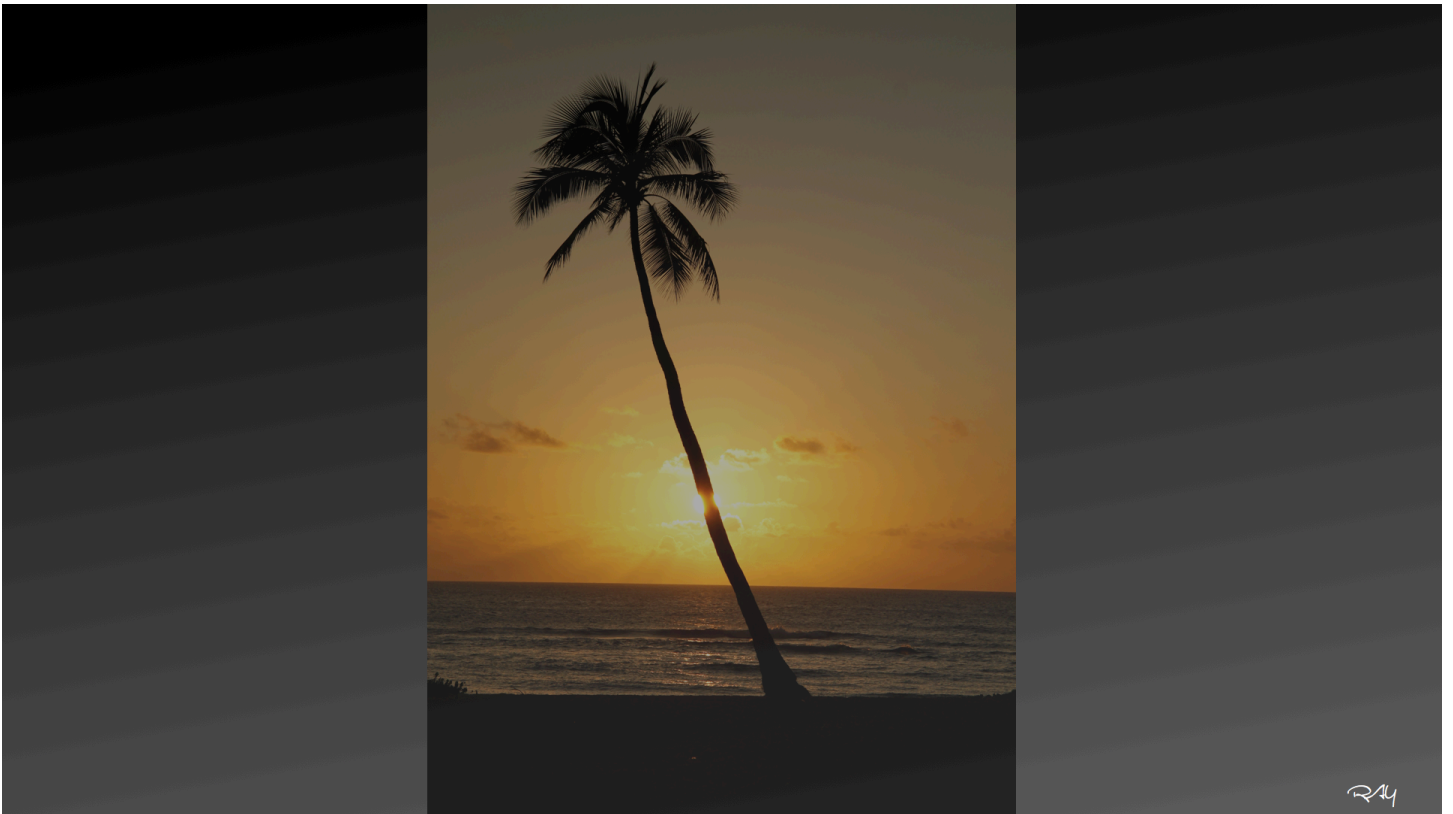


Photography

An Essential Tool for Communication in Dentistry



My Current Handout

Richard A. Young, D.D.S.

Handouts Online

My most recent handouts as well as the videos in today's presentation are available for you to download at GoDaddy's Online File Folder or can be found at my website below. All of my contact information is in the handout. My contact information is also below if you are having trouble getting the handout or would like to contact me directly.

Instructions for Downloading:

Go To: www.onlinefilefolder.com

Enter your user name and password that has been given to you and click on the "Log in Now". Please note they are case sensitive.

User Name: **ryounghandouts**

Password: **dentist**

Make sure that you are in the "Home" folder. Go to the appropriate folder name and open it. You will find the file listed as "Current Handout" or by the meeting name. Click on the check mark at the right and select "download". You would do the same for the "Photo Lecture Video's". Please do not delete any of the files so that they are there for the next person who wishes to download them.

Photo DVD



NEW DVD - 2 DISC Set \$199

Dental Photography
by Dr. Jim Dunn, Dr. Brian P. Lesage & Dr. Richard Young

A **MUST-HAVE** guide and reference for your practice.
Choose the **BEST** camera for your needs.
Document your cases with **EXPERT** intra-oral photos.
Consistently produce **STUNNING** smiles and portraits.

To Purchase ▶

Order from www.photomed.net or www.gidedental.com

DDSGP Purchase

- Go to: www.ddsgp.com
- On the home page look for ▶ [Purchase through an affiliate](#) right above the price (middle of the page-bottom)
- Click on this link and it will take you to the affiliates page.
- Click on "**Richard Young DDS**"
- This will take you to the product on "**DDS GP By Kick Your Apps, Inc.**" page.
- To Purchase: Click on the "**View in iTunes**" to actually purchase the application.
- This will take you to iTunes where you can hit the "**399.99 Buy App**" purchase button

I hope that the time spent today has been informative and helpful as you pursue Excellence in Dentistry

"That which is worth doing, is worth doing well"

www.dentalphotographyseminars.com
www.ryoungdds.com

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Contacts and Suggestions

Cameras and Support Equipment

- PhotoMed International:
 - (800) 998-7765, www.photomed.net
 - ClearMatch Software dealer
 - The best source for dental specific photography, this includes all accessories such as cheek retractors, mirrors, etc.

- B & H Photo:
 - (800) 606-6969, <http://www.bhphotovideo.com/>

- DynaFlex:
 - (866) 346-5665, <http://www.dynaflex.com> an optional source for mirrors that I use. The three mirrors listed below are my favorites, and what I use daily. Also a great source for cheek retractors
 - Lingual #12 (#0795-12)
 - Buccal #13 (#0795-13)
 - Occlusal #14 (#0795-14)
 - Price is \$40.00 each for a purchase of 3 or more.

- Panadent Corporation
 - (800) 368-9777, www.panadent.com

Photo Imaging and Organization

- ACDSee Systems:
 - <http://www.acdsystems.com/English/index.htm>
 - Buy **ACDSee Photo Manager 12** or **ACDSee Pro 4**
 - Purchase online for \$69.99 and \$239.99 respectively.
 - The only reason to buy Pro 4 is for the following additions:
 - Can work with 100 file formats
 - Non destructive raw processing
 - Lens correction tool in the editing mode (really not needed in dental photography)
 - Watermarking capability
 - HDR Capability if this interest you.
 -

PhotoSlate 4 for printing photos and making photo printing templates.

- FastStone Image Viewer 4.2
 - <http://www.faststone.org/>
 - Free software that is very fast with thumbnail management.
 - Great free alternative, but not as robust for backing up as ACDSee products.

- Use it on your workstations, and have one copy of ACDSee on a computer that you use for backing up to other drives.
- ThumbsPlus Professional 7.0 or Photodontics 1.0:
 - <http://www.thumbsplus.com/> in stores or online for \$59.95
 - <http://www.cerious.com/photodontics.shtml>, \$289.00 (a very poor use of your money)
- Seattle Software
 - <http://home.att.net/~SeattleSoftwareDesign/index.htm>
 - Imaging Software
- Virtual Smiles
 - (714) 283-0186, <http://www.virtual-smiles.com/>
 - Computer imaging service around \$100 per photo.

Computers and other Misc. Components

- Laptop Suggestions (these change constantly)
 - CPU: Intel Core 2 Duo 1.8 GHz or greater
 - Operating System: Windows XP Professional (preferred) or Vista.
 - RAM: The most that you can afford. 512 MB minimum with 1 GB preferred, I have 2GB in my Fujitsu and 8GB on my Mac Book Pro i7-17".
 - Tablets look at Fujitsu, Motion Computing, Toshiba, and HP.
 - Hard Drive: 40 GB minimum with the bigger the better. 160 GB would be great.
 - Display: Monitor size depends on the computer you choose and what you want to carry around. If you go into the 15"-16" range than an SXGA + is ideal for photography; this size monitor is also good for a substitute to the desktop for patient viewing.
 - The other items like USB 2, Firewire, Optical Drives DVD/CD/CD burner, etc. are standards on all current laptops and can be configured differently from brand to brand.
 - Some good brands are Toshiba, Sony, and Fujitsu. (Fujitsu being a good buy for the money)
- Touch Screen Monitors
 - One World Touch. www.oneworldtouch.com, (888) 928-2929
- Bamboo Pena & Touch
 - http://www.wacom.com/bamboo/bamboo_pen_touch.php
- Snagit-used with the Wacom Tablet <http://www.techsmith.com/snagit/default.asp>
- Snipping Tool-Can be used if you are running Windows 7. You will find it under Accessories.
- External Hard Drives
 - Too numerous to mention. www.newegg.com.
 - Go with the largest harddrive that you can afford. Stick to single spindle drives.
- Small Portable Hard Drives
 - Many companies like Western Digital are selling portable drives that are very reasonable. The current 500GB (2.5" Ultraportable) Western Digital is \$179.99 through www.newegg.com.

- Card Reader:
 - Rocketfish High-Speed CF/SD/SDHC Card REader, Model #RF-CRSWIVEL from Best Buy.
- TS Retractors
 - www.tsretractors.com
 - A great cheek retractor addition to your retraction devices.
 - Designed by Todd Snyder, D.D.S. 949.716.0109

Portrait Items

The Portrait Items listed below can be purchased as a complete kit with instructions from PhotoMed. This will save you the time and hassle of putting it together yourself.

- Lightsphere II:
 - www.garyfong.com,
 - Canon 430EEX uses a #3 Lightsphere, 580 EX uses a #4 Lightsphere
- Duvatyne
 - Rosebrand: www.rosebrand.com or (800) 360-5056
 - You will want to buy at least 2 yards, enough material to rap around a piece of art foam board and have some left over. The foam board can be purchased at any art or office supple store. Staples, Office Depot, or Aaron Brothers will have this product. You also will need two 3\4" wooden dowels and some cloth adhesive or patch glue.
- LightDisc by Photoflex:
 - 22" (Mfr. #DL1322WS), Purchase from B&H Photo or Samy's Camera
- Camera with a hot shoe
 - Canon G9, Rebel Xti, or 40D.
- Appropriate Flash for your Camera, if using Canon the 430EX or 580 EX would be the best choices.
- ExpoDisc
 - <http://www.expodisc.com>
 - Available from BH photo and many others. Go with the 77mm. or your largest lens. You can always use a smaller lens with it.

Miscellaneous

- Smile-on Ltd: Clinical Photography, a clinical photography tutorial with CD and photo examples. www.smile-on.com available from www.Photomed.net (800) 998-7765.
- Paul Homoly, D.D.S.: 800.294.9370
 - www.paulhomoly.com
 - Homoly Communications Institute, Inc.
2125 Southend Drive, Suite #250
Charlotte, NC 28203

- Digital Photography Review:
 - <http://www.dpreview.com/> great source for camera reviews etc
- PhiMatrix: Golden Proportion Website
 - <http://www.phimatrix.com>
- Steve Marguardt, D.D.S.: Golden Proportion Website
 - <http://www.beautyanalysis.com>
- Some Other useful websites
 - <http://www.goldenmeangauge.co.uk>
 - www.motioncomputing.com
 - <http://www.computers.us.fujitsu.com/>
 - <http://www.tabletpc2.com/>
 - http://www.mycanong7.com/html/g7_g9_grip_tr.html
 - Hand Grip for the G7/G9
- High Quality Photographic Printing
 - www.nasheditions.com
 - [Epson Printers: Epson Stylus Pro 4800, \\$1700.00](#)
- Power Point Item and some other fun stuff
 - www.nxpowerlite.com
 - Advanced compression for Microsoft Office
 - If you make power point presentations, this program allows you to import your photos in full size and then compress the presentation to different degrees, depending on your needs.
 - www.morpheussoftware.net
 - A fun program to morph dental before and after photos
- Eye-Fi
 - www.eye.fi
 - Wireless USB Card Reader
- Portrait Professional
 - <http://www.portraitprofessional.com/>
 - Facial imaging program, very reasonable cost
- Drobo
 - <http://www.drobo.com>
 - back up source with great capabilities
 - Talk with them direct to design the system that will best fit your needs
- For the iPad
 - www.ddsgp.com
 - ShutterSnitch
 - Cinq
- The Digital Dentist
 - Lorne Lavine, D.M.D., (866) 204-3398
 - Dental Technology Consultant
 - www.thedigitaldentist.com

Hallway Portrait Set-Up

Direct Light

Ceiling Bounce

Fill Light

Side Light



This is an example of an ideal spot for setting up your portrait area. The walls are neutral color, the ceiling is 9' and the hallway is 4' wide. There are many areas that will work in the average dental office. If you need to have the area in front of a window you can use 16 oz. commando cloth in black instead of 8 oz. Duvatyne, available from the same supplier. The commando cloth will block out all the light.

RAY

Chair Side Set-Up for Portraits



Portrait Items Needed:

1. Camera
2. Flash Unit
3. Fong Lightsphere
4. Round Light Disc
5. Duvatyne 8 oz
6. Art Board for chair side portraits.
7. Hanging hardware for the Hallway set-up: 3/4" wood Dowel . Cord or chain, 2 eyelet screws.

Camera Settings for Portraits

- "P" for Program or
- "M" for Manual at f 5.6-f 8 with a shutter speed between 160 and 250
- Lens at "Auto" for auto focus
- Camera Vertical and one with the camera horizontal
- Flash Turned with Diffuser Top Toward Ceiling
- White Reflector Held by Patient

Some Helpful Camera Settings

Below is an example of the required photos for case presentation with the AACD. Keep in mind that the magnification was based on a full frame camera like the Canon 5D or a film camera. If you are using a camera like the Canon Rebel or 40D you would have to make some minor changes. The 1:1 would be 1:1.5 approx., the 1:2 would be 1:3 approx., and the 1:10 would be 1:16 approx. The AACD is looking for specific landmarks to show in any given photo, so you must have their guide as to what they want specifically. The magnifications will change according to the size of the subject's teeth, smile, and face. Another words, a 1:1.5 magnification may not get everything that you need on a very large mouth.

Title Slide			
Case Type (with pre-op slides)	Full Face Photo	Front Smile	Right Smile
Treatment List slide (with post-op slides)	1:10	1:2	1:2
Left Smile	Front Retracted	Right Retracted	Left Retracted
1:2	1:2	1:2	1:2
Front Retracted	Right Retracted	Left Retracted	Occlusal Upper
1:1	1:1	1:1	1:2
Occlusal Lower	X-ray or technique	X-ray or technique	X-ray or technique
1:2	1	2	3
X-ray or technique	Technique	Technique	Technique
4	5	6	7



This slide shows the basic accessories that are needed for quality intraoral photography:

- ✓ A computer
- ✓ Mirrors
- ✓ Cheek/Lip Retractors
- ✓ Contrastors
- ✓ Data Storage-External Hard Drive
- ✓ Storage Card for the Camera
- ✓ Card Reader
- ✓ Software-easy to use for Viewing, organizing, and manipulating the images

Let's Sum up the camera Choices



Digital SLR-same as the first, but using a twin flash set-up instead. There are a couple options for this type of set-up depending on Nikon or Canon



Digital point and shoot style camera, with a Photomed flash diffuser. Canon G10



Digital SLR-Canon or Nikon
With a Ring Flash and a 100-105 mm macro lens.

Nikon D90 with the 85mm and a Metz wireless flash unit. This is a very light system if you are a Nikon fan looking for a ring flash set up.





Canon MR-14EX Macro Flash
\$549.00

Canon MR-14EX Macro Flash with Light Macro Flash
\$749.00

With the Soften Diffusers



Flash options for the digital SLR type Camera:

Ring Style

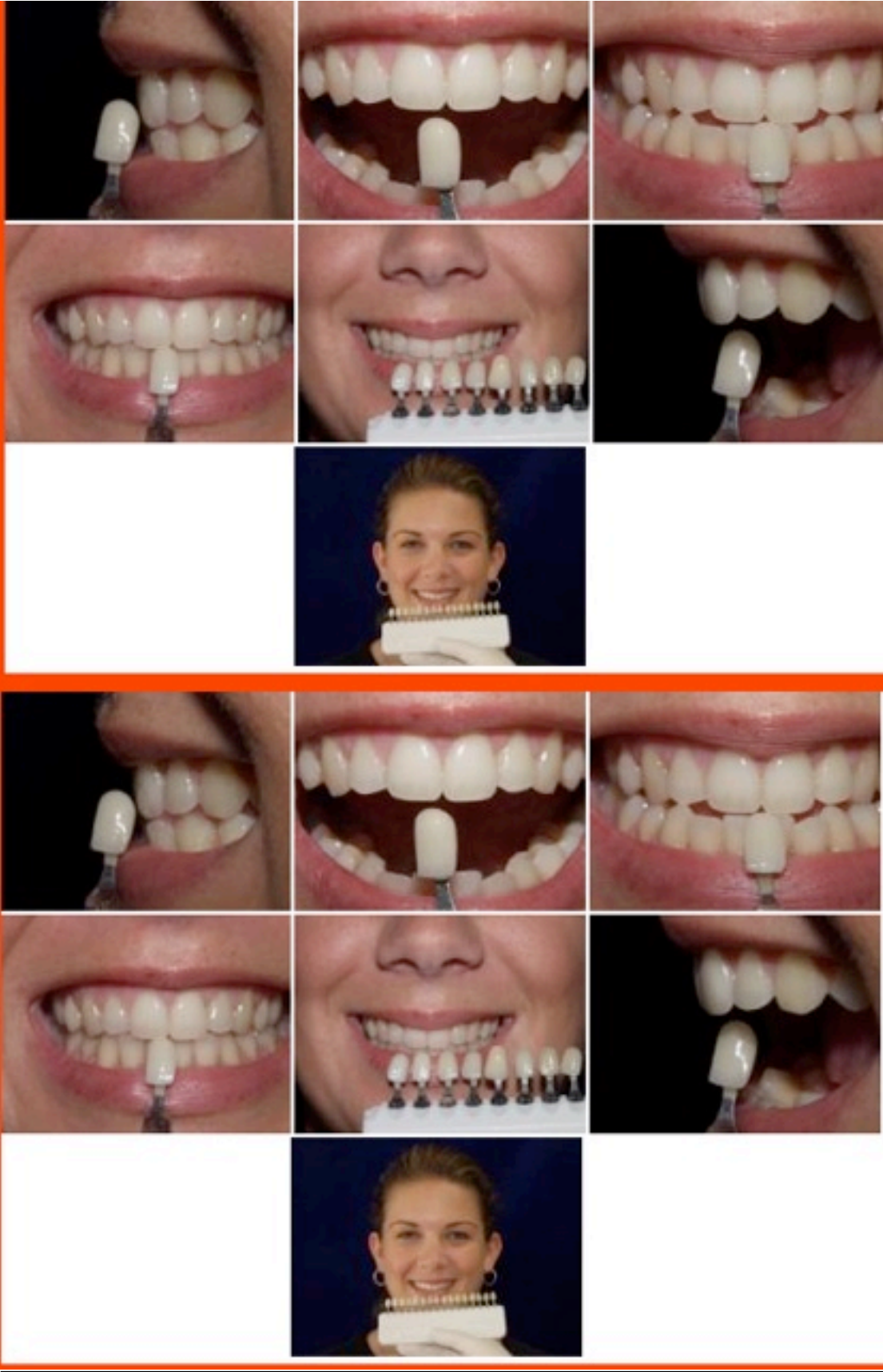
Twin Flash Style

Lightsphere II by Gary Fong



This is an example of the Gary Fong "Lightsphere" set-up for both an SLR and a point and shoot. There are a number of new diffusers developed by Gary Fong to choose from.

Below is a Photo Series that is recommended by Dene LeBeau of "LeBeau Dental Lab" for shade communication



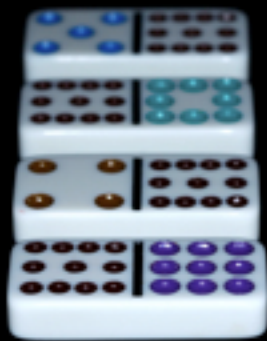
Camera Settings

How "F" Stop and Shutter Speed affects the image:

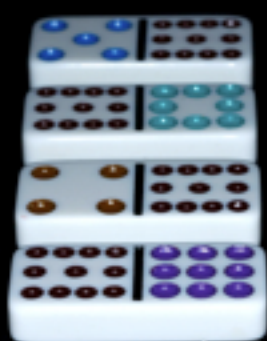
- Smaller number = larger lense opening = less in focus
- Larger number = smaller lense opening = more in focus



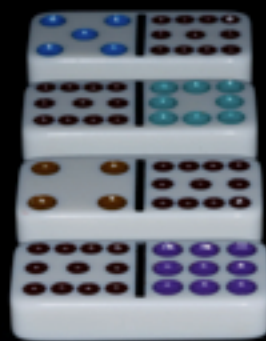
F2.8



F8



F16



F32

RAY



f2.8



f8



f16

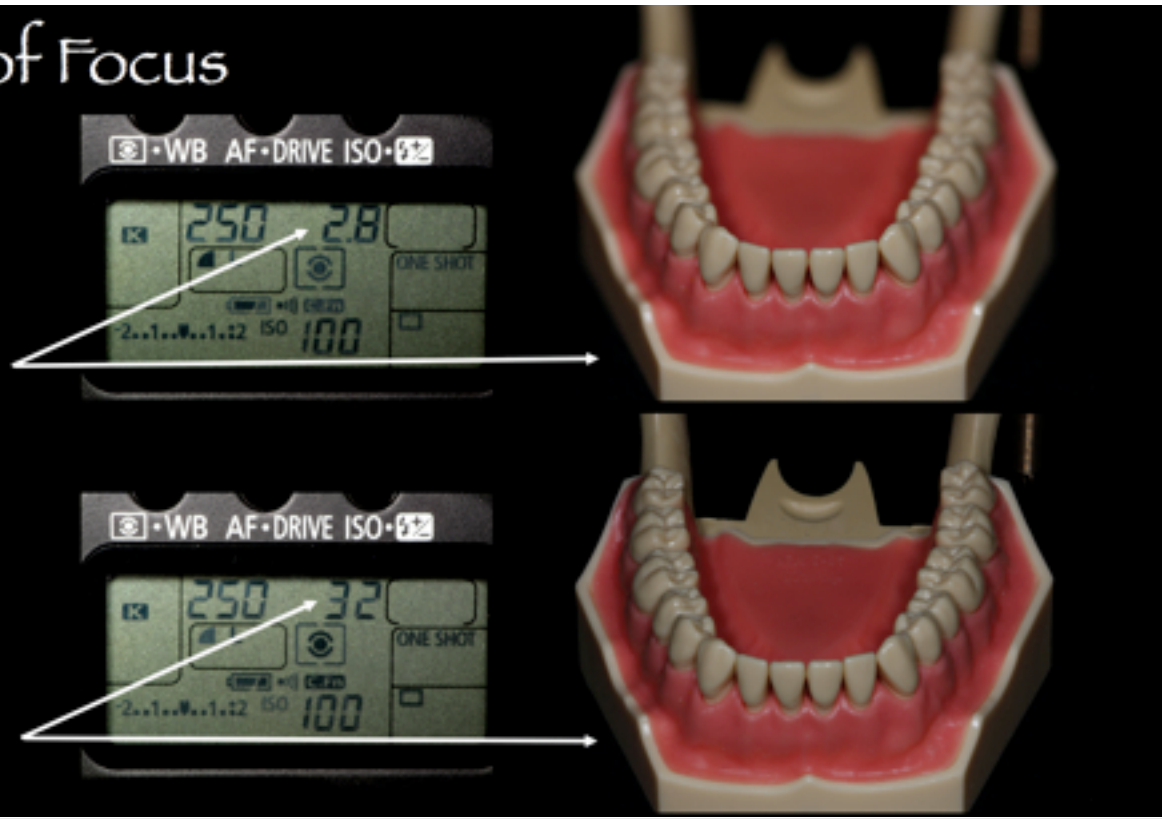


f32

RAY

Depth of Focus

SLR
With a
Macro
Lens



For most dental photography we set the SLR cameras at f22 and set the shutter speed to 250s and leave the flash in the TTL mode. This allows you to get a full occlusal shot in focus. The draw back with the Point and Shoot style camera is the “f” stop. They only go to f8, which limits how much of your photo field will be in focus.

The series of photos on the next page were shot with a point-and-shoot. You can decide if they would be satisfactory for your photographic needs. The cant or tilt of the teeth in the anterior photos show that the patient has a canted occlusal plane. This is accurately captured using the top of the diffuser on the G10 flash diffuser, and most valuable in esthetic evaluation and treatment planning.







This series of photos from an actual new patient exam shows an example of the “must have” photos for the initial exam. Many more photos are taken that can aid the doctor in the diagnosis and treatment planning phase. If a case is chosen to be used for accreditation purposes a separate photo session is set up to capture the exact photos needed following the guidelines of that organization.

Remember that the Camera is your eyes to aid you in diagnosis and treatment planning after the patient is no longer in front of you.

A Common Error in Shooting the Anterior Smile or Retracted Photo

Incorrect (Not Artistic)



The photograph is taken with the camera angled below perpendicular to the teeth

Correct (Artistic)



The photograph is taken with the camera perpendicular to the teeth.
You can shoot slightly above perpendicular for a artistic look.

Manual Dental Settings

- Set Camera to the "M" mode (Manual)
- Set Shutter Speed at 1/65-200
- f-stop between f22-f32
- ISO 200
- Lens magnification at 1:3
- White Balance to "Flash" or set "Custom" with a "Grey Card".
- Put the flash in "M" mode instead of TTL
- Set the Flash Power to 1/4
- Adjust exposure by changing the f-Stop up or down
- Too bright go to higher number (f22 go to f29)
- Too dark go to lower number (f29 go to f22)
- Also adjust exposure by adjusting the flash power up or down
- You can use a light meter for setting the exposures as well

R24

Shade Communication using a Tablet Computer (Fujitsu LifeBook T5010)



Golden Proportion Procedures

Vertical Proportions:



Referencing the inner canthus of the eye and the ala of the nose, evaluate the incisal edge position vertically in the face for ideal mid-face proportions.



Referencing the columella of the nose and the incisal edge position, evaluate the menton position (vertical dimension of occlusion) for ideal lower facial proportions.



If the OVD is not being changed, reference the columella of the nose and the patient's present menton position to evaluate an ideal incisal edge position.

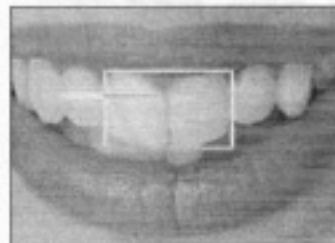
Horizontal Proportions:



The width of the mouth is approximately 60% wider than the width of the nose.



The width of the nose is approximately 60% wider than the width of two central incisors.



The width of two central incisors is approximately 60% wider than the length of one central incisor.

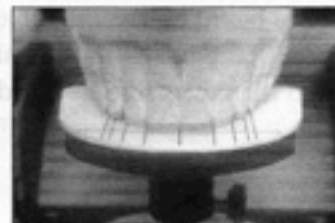
Kois Platform & Waxing Guides:



A golden proportion waxing guide, based on the width of one central incisor, can be added to the Kois platform to evaluate tooth widths.



The Kois platform can be adjusted up or down to the incisal edge position desired to produce ideal tooth lengths.



Both tooth lengths and tooth widths can now be fabricated to achieve an ideal treatment for both esthetics and function.

References:

1. Dr. Richard E. Lombardi, D.D.S.
"The principles of visual perception and their clinical application to denture esthetics".
JPD, April 1973, Vol. 29, Number 4, pages 358-382
2. Dr. Edwin I. Levin, R.C.H.D.
"Dental Esthetics and the golden Proportion".
JPD, September 1978, Vol. 40, Number 3, pages 244-252.
www.goldenmeasuring.co.uk
3. Dr. Robert M. Ricketts, D.D.S., M.S.
"The Golden Divider".
Journal of Clinical Orthodontics, November 1981, Vol. XV, Number 11.
4. Dr. Stephen Marquardt, D.D.S.
www.beautyanalysis.com



Esthetic Dentistry for Adults and Children

Client Photo Release Form

I _____, hereby authorize Drs. Young and Zerne, "Esthetic Dentistry for Adults and Children" or any of their assignees to take photographs, slides, and / or videos of my face, jaws, and teeth.

I understand that the photographs, slides, and / or videos will be used as a record of my care, and may be used for educational purposes in lectures, demonstrations, advertising (including website publication, newspapers, magazines, phone books, television), and professional publications (dental magazines and journals).

I further understand that if the photographs, slides, and / or videos are used in any publication or as a part of a demonstration, my name or other identifying information could be used unless stated differently below. I do not expect compensation, financial or otherwise, for the use of these photographs.

Please initial:

_____ I do not mind if my name, and face are used in any of the above stated situations.

Exceptions:

_____ I do not wish to have my name shown, or released.

_____ I do not wish to have my face shown.

Signed _____ Date _____



Esthetic Dentistry for Adults and Children

Employee Photo Release

I agree that for training, educational, marketing, or promotional uses, Drs. Young and Zerne, "Esthetic Dentistry for Adults and Children" and its assignees may make perpetual use of any photographs, videos, recordings, and other likenesses of me taken by the Practice or its' designees without the payment of any additional consideration. The Practice may use such photographs and of any reproductions with or without employee's name, and with or without modifications or alterations.

Signed _____ Date _____

Below is a view of basic camera settings for dental photography. These would also be found in the Photomed set-up guide for any camera that you purchase from them. Photomed also includes instructions for setting the camera for Before and After Bleaching Photos-----Manual settings

