

MOD | INSTITUTE

LIGHT MADE SIMPLE



Dental Photography eBook

BY DR. ALLAN QUEIROZ

INTRODUCTION

My Passion

I am deeply passionate about dentistry, just like you.

Photography completely revolutionized the way I see my profession—it was the game-changer that transformed everything.

Today, I've had the privilege of empowering over 3,000 students worldwide with my exclusive dental photography method. My mission? To make things simpler for you.

With 10 years of experience as an implantologist and prosthodontist, I've dedicated my career to digital dentistry and photography - tools that drive me to achieve clinical excellence every single day.

Photography is a powerful medium for growth and distinction. And I'm here to guide you on this journey. Together, let's redefine how you see and practice dentistry. Let's get started!

Best,



Dr. Allan Queiroz
Sr. Faculty & Creative Director of The MOD Institute

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Front cover image by Dr. Allan Queiroz. Supporting images by Dr. Michael DeFee and Dr. Griffen Revell. Names, places, products and events are the sole opinion of the author.

Published by WRMDSV II LLC, in the United States of America.

First Publication December 2024

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“In today’s visual world, imagery is the foundation for building patient trust.”

DR. ALLAN QUEIROZ

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F:22
SHUTTER: 1/125
ISO: 200
WB: 5500K
MOD SOFTBOX
+TWIN FLASH



F:22
SHUTTER: 1/125
ISO: 200
WB: 5500K
MOD SOFTBOX
+TWIN FLASH



F:22
SHUTTER: 1/125
ISO: 200
WB: 5500K
MOD SOFTBOX
+TWIN FLASH

LET'S GET STARTED

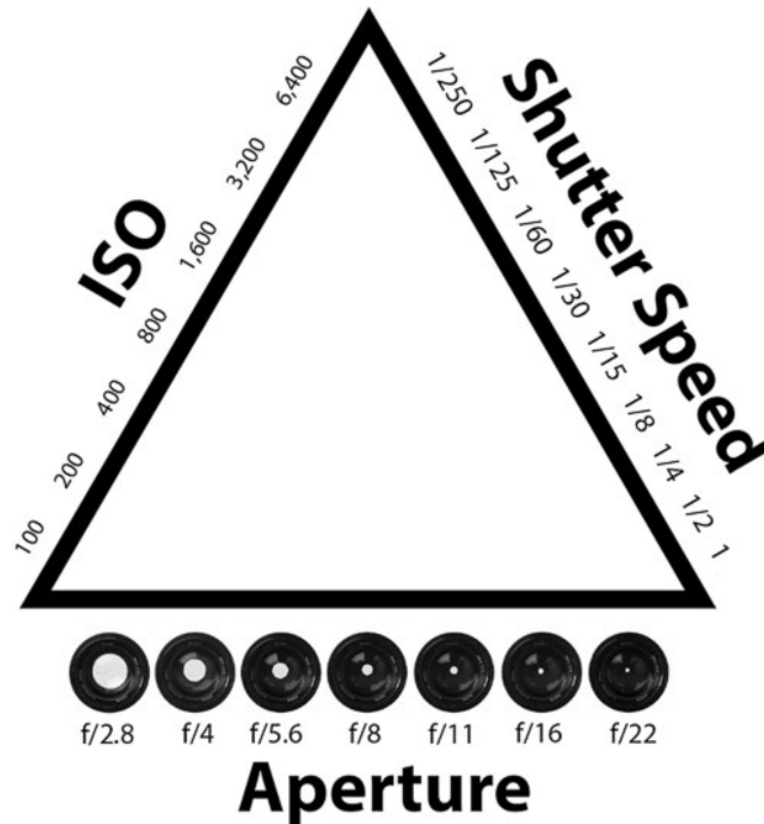
1. The Exposure Triangle



The Exposure Triangle

Manual mode empowers us to fully control the exposure triangle: Shutter, Aperture, ISO. When we find the right balance between these tools, we can achieve the correct exposure for our dental photographs.

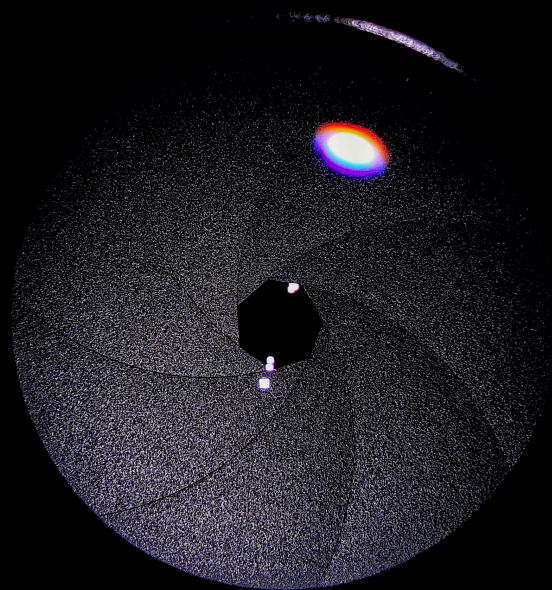
Next, we'll look at them each individually.



2. Aperture



CHAPTER TWO: APERTURE

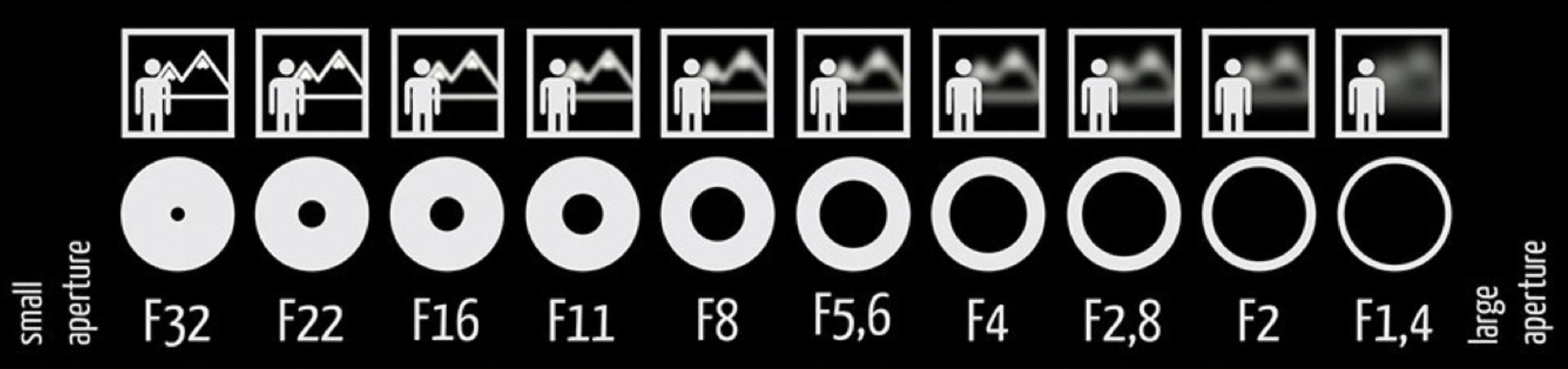


The diaphragm controls the aperture of the camera and is like the pupil of our eye, it opens and closes. Allowing more or less light to enter the camera sensor.



Diaphragm

Measured in F-stops, or F-numbers, changing the diaphragm controls the aperture.



Diaphragm

Compare the light in this photo, if the diaphragm is open we have more light, if it is closed we have less light.



F32
Diaphragm Closed



F2.8
Diaphragm Open



Depth of Field

The perceived distance between the closest and farthest objects is called the depth of field. When the diaphragm is open we have a smaller depth of field and vice versa. For dental photography, we need to optimize the setting around our desired depth of field for texture and detail.



Notice that we can see more elements with sharpness, focus. From the central incisors to the molars we have elements within this area of focus (Depth of field).



Diaphragm Closed



Notice that we can see fewer elements with sharpness, focus. We only have focus from canine to canine, after the distal of the canine we already lose depth of field (focus area)



Diaphragm Opened

MOD Photography Protocol

SETTINGS

APERTURE

F22

We will be using a F-Stop of 22, which will give us a good depth of field to work with all styles of dental photography. To balance this, we will have to set the power of our flash to balance the light that will enter the camera sensor, since the aperture is more closed, less light will enter, so we need a higher flash power, which will be covered in a later chapter.

3. Shutter Speed



CHAPTER THREE: SHUTTER SPEED

The exposure time in a camera, also known as shutter speed, controls how long the sensor will be exposed to light. To adjust it, simply set the shutter speed, which is measured in fractions of a second, 1/500, 1/60 or full seconds. A shorter exposure (faster shutter speed) allows less light, freezing motion.



CHAPTER THREE: SHUTTER SPEED

If you increase the shutter speed, you will have less light entering the sensor, and you can capture static objects. If you decrease the shutter speed, you will have more light on the sensor and we can get blurry photos if an object moves.

Underexposure



1/1000

Correct Exposure



1/125

Overexposure



2"

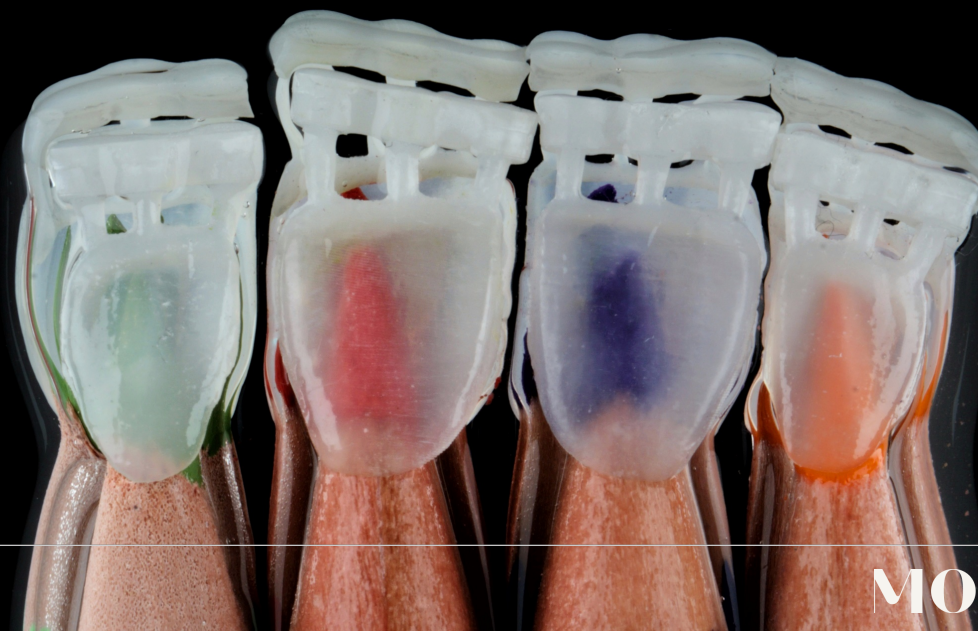
Shutter Speed and Exposure Time

Longer Exposure Time, Slow Shutter Speed, High Exposure Time are different names for the same setting. This type of setting delivers more light to the photo, but if the camera or the object being photographed moves, the photo will be blurry, as in the image on the left. Shorter Exposure Time, Fast Shutter Speed, Low Exposure Time where the shutter is very fast and delivers less light to the photo, but the objects tend to remain stationary. This is setting we will optimize around.

Slow Shutter
(Blurred objects)



Fast Shutter
(Static objects)



MOD Photography Protocol

SETTINGS

APERTURE

F22

SHUTTER SPEED

125

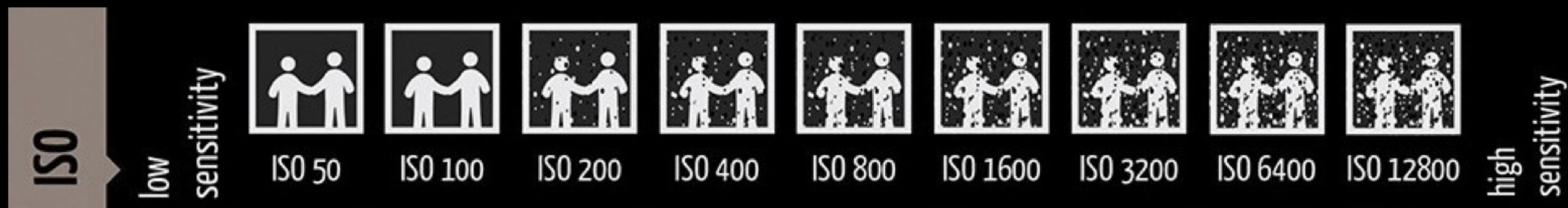
The MOD Photography Protocol for simplifying shutter speed is to utilize a rate of 125 frames per second allowing us to capture the right amount of light while stopping objects.

4. ISO



CHAPTER FOUR: ISO

ISO is sensor sensitivity to the presence of light, if you increase the ISO value you get more light, if you decrease it you get less light, but along with high values you also get graininess.





LOW ISO
Clear, Grain-Free Photography

HIGH ISO
Grainy Photography

MOD Photography Protocol

SETTINGS

APERTURE

F22

SHUTTER SPEED

125

ISO

200

In dental photography we always use a flash which produces consistent light. Therefore, we can set a low ISO. For the MOD Photography Protocol we recommend an ISO of 200.

5. White Balance



Temperature

In simple terms, white balance is simply communicating to the camera the temperature of the light being used, in this case we have to adjust for a white light flash.



Representing Color

It is super important to correctly adjust the white balance to avoid incorrectly documenting substrate colors, for example.

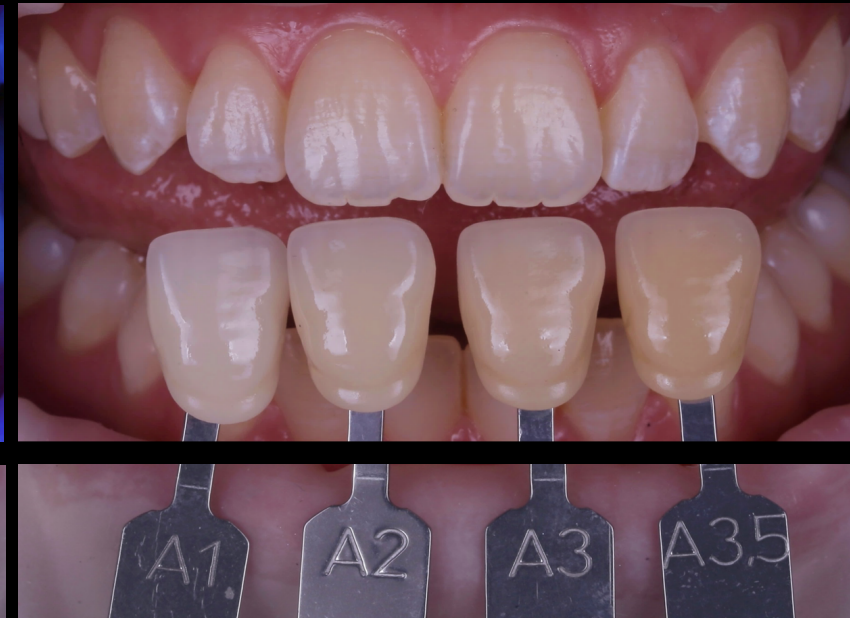
Very warm light temperature, indicating yellowish colors.



Very cold light temperature, indicating bluish colors.












Correct light temperature, indicating colors correctly.



Kelvin Settings

We'll use Daylight, or 5200 K for semi-professional cameras, and in professional cameras we'll adjustment the Kelvin to a white light a temperature of 5500 K. Never use Automatic or AWB.

Display	Mode	Color Temperature (Approx. K: Kelvin)
 AWB	Auto	3000 - 7000
	Daylight	5200
	Shade	7000
	Cloudy, twilight, sunset	6000
	Tungsten light	3200
	White fluorescent light	4000
	Flash use	6000
	Custom	2000 - 10000
	Color temperature	2500 - 10000

MOD Photography Protocol

SETTINGS

APERTURE	SHUTTER SPEED	ISO	WHITE BALANCE
F22	125	200	5500 K

5500 K in dental photography, for professional cameras, represents a true color temperature that, in our testing, can be compared across dental aesthetic standards.

6. Flash





The MOD SoftBox is a major leap forward in simplifying dental photography lighting. It is a 3D Printable, single light diffuser that can be used for all forms of dental photography.

Flash Equipment

In addition to The MOD Softbox, you will need 3 Twin Flashes, which are controlled from your camera by a trigger.

We recommend the GODOX MF-12 Twinflash, specifically compatible with the MOD Softbox.



Trigger

To communicate the camera with the flashes we need to have a Trigger. We recommend the 2 following options based on your pricing and availability options.

GODOX X2T



GODOX X PRO



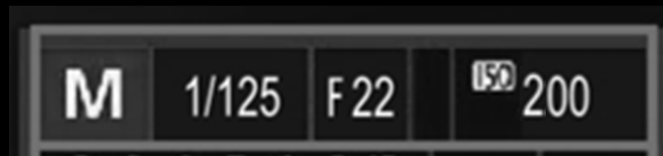
MOD Photography Protocol

SETTINGS

APERTURE	SHUTTER SPEED	ISO	WHITE BALANCE	FLASH
F22	125	200	5500 K	1/2

To balance the settings of The MOD Photography Protocol, we recommend a setting of 1/2 or 50% power for your flash system. This is always set in manual mode, never in TTL or ETTL.

MOD Photography Protocol



The MOD Photography Protocol in action using a Canon R5 paired with a GODOX MF-12 Twinflash.

7. Recommended Equipment



Kit 1: Entry Level



Semi professional camera Canon Rebel T8i
(APS-C sensor) + 60mm macro lens "f"2.8

Kit 2: Intermediate



Professional camera Canon 6D (Full frame sensor) + 100mm macro lens "f"2.8

Kit 3: Professional



Professional camera Canon R5 (Mirrorless) + Mount Adapter EF-EOS R + 100mm macro lens "f"2.8



3 MOD Softbox Units with Godox Twinflash MF-12,
utilizing a Godox X Pro or Godox X2T trigger.



Godox Bracket MF-DB for Godox Twinflash MF-12



2 Black "C" mouth retractors and 1 Black
"Flexipalett" contrast from Smile Line



3 flash tripods, with universal screw head to connect with
Godox Twinflash MF-12

8. Extraoral Photography





PHOTO ONE

Extraoral

Photo One

To obtain an extraoral smile photograph as shown in Photo One, you should position the flashes bilaterally with a 45-degree inward tilt towards the midline of the face. The recommended distance from the softbox to the patient's face is approximately 10cm.

Set your camera and flash as follows: Shutter 1/125 | f.22 | ISO 200 | Flash 1/2 (50%) | WB 5500 Kelvin



You can use the flashes together with the Godox MF-DB Bracket or ask the patient to hold it.



PHOTO ONE
Extraoral

You can use the flashes together with the Godox MF-DB Bracket or ask the patient to hold it.



PHOTO ONE

Extraoral

9. Intraoral Photography





PHOTO TWO

Intraoral

Photo Two

To obtain an intraoral smile photograph as shown in Photo 2, you should position the flashes bilaterally in a frontal position toward the patient's smile. Pay attention to the removal of the 45-degree inclination that we had before. This adjustment will ensure the absence of shadows in the buccal corridor. Another great tip is to use "C" mouth openers and to stretch the soft tissue so that the light can penetrate and illuminate the buccal corridor. The recommended distance from the softbox to the patient's face is approximately 10cm, here I recommend using the Bracket Godox MF-DB connected with the Twinflash. Settings for your camera and flashes: Shutter 1/125 | f.22 | ISO 200 | Flash 1/2 (50%) # WB 5500 Kelvin.





MOD

PHOTO TWO
Intraoral



PHOTO THREE

Extraoral *With Black Contrast*

Photo 3

To obtain an intraoral smile photograph as shown in Photo 3 using black contrast you should position the flashes bilaterally in a frontal position towards the patient's smile. This adjustment will ensure the absence of shadows in the buccal corridor. Another great tip is to use "C" mouth openers and to stretch the soft tissue well so that the light can penetrate and illuminate the buccal corridor. Bend the Smile Line Contrast, as it is made of rubber, so that it rests on the occlusal surface of the lower teeth, and it will remain stable on its own, allowing you to take this photo without the help of an assistant. The recommended distance from the softbox to the patient's face is approximately 10cm. Settings for your camera and flash: Shutter 1/125 | f.22 | ISO 200 | Flash 1/2 (50%) | WB 5500 Kelvin.

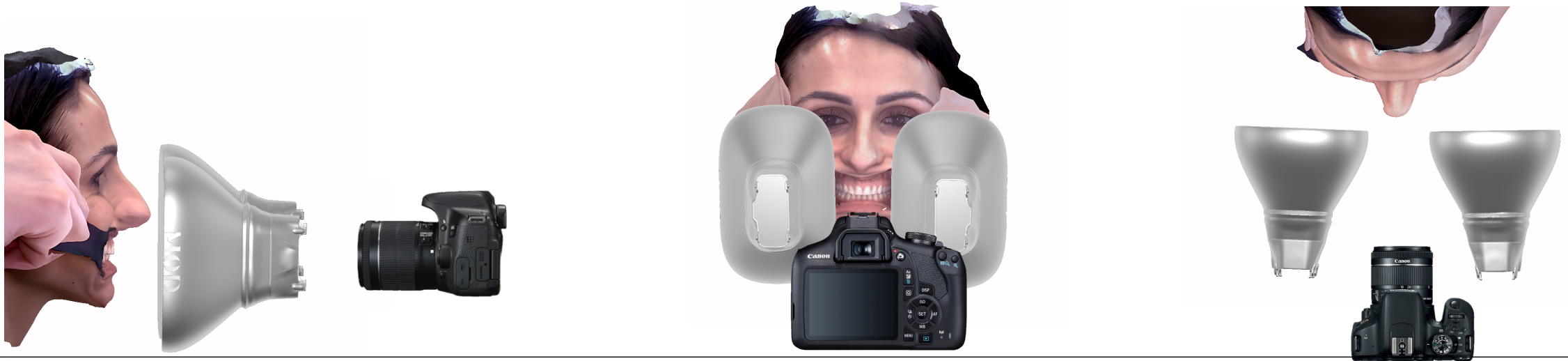




PHOTO THREE

Extraoral *With Black Contrast*

10. Occlusal Photography



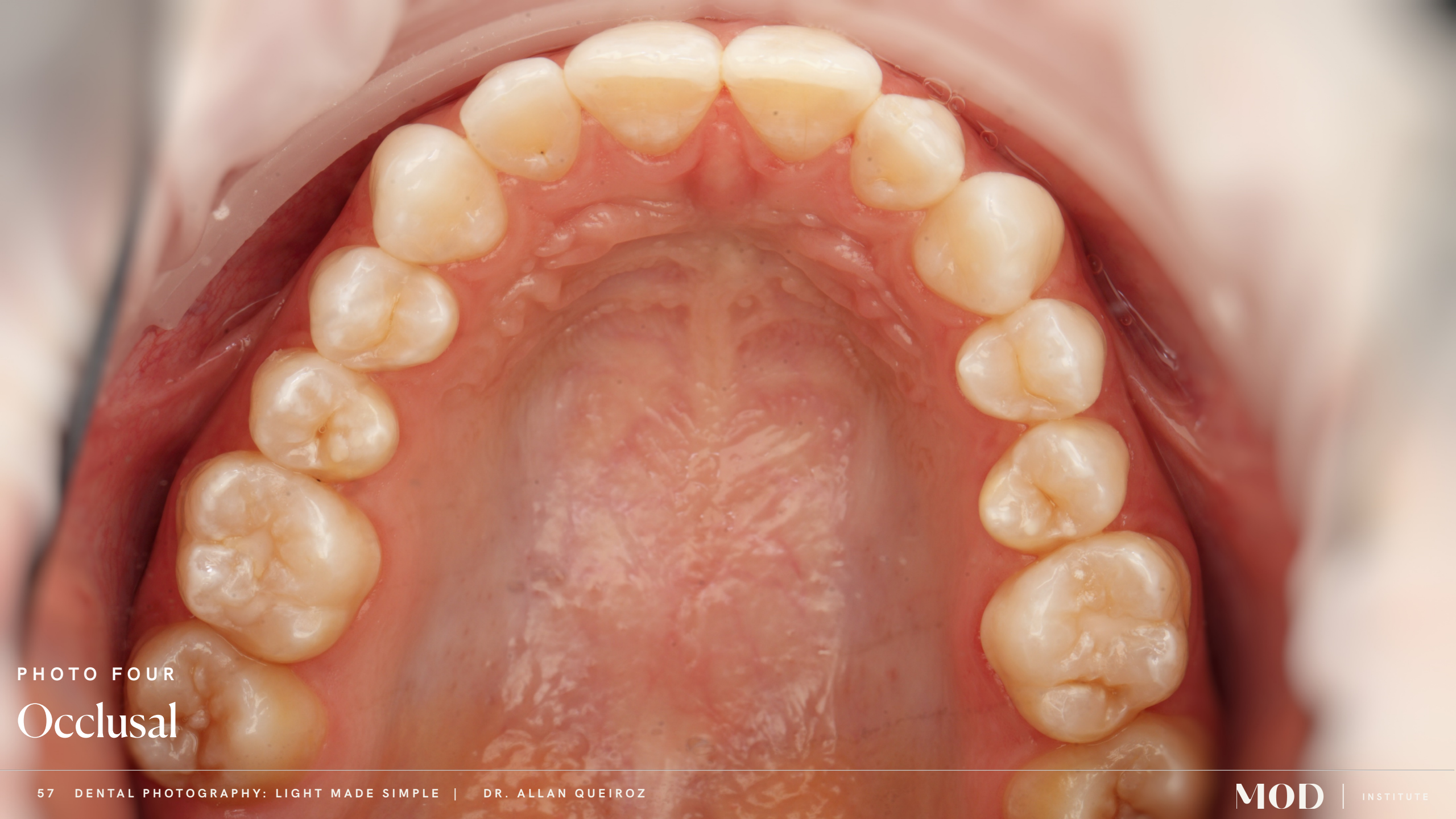


PHOTO FOUR
Occlusal

The best tip for occlusal photos is to use clean mirrors, without scratches. The light should be positioned in front of the mirror so that the reflection can illuminate the occlusal surface of the teeth. We recommend using ISO 320 to improve the lighting in this photograph.



PHOTO FOUR
Occlusal

Support the mirror following the occlusal plane of the antagonist arch. To prevent the mirror from fogging up, you can use air or slightly warm the mirror.

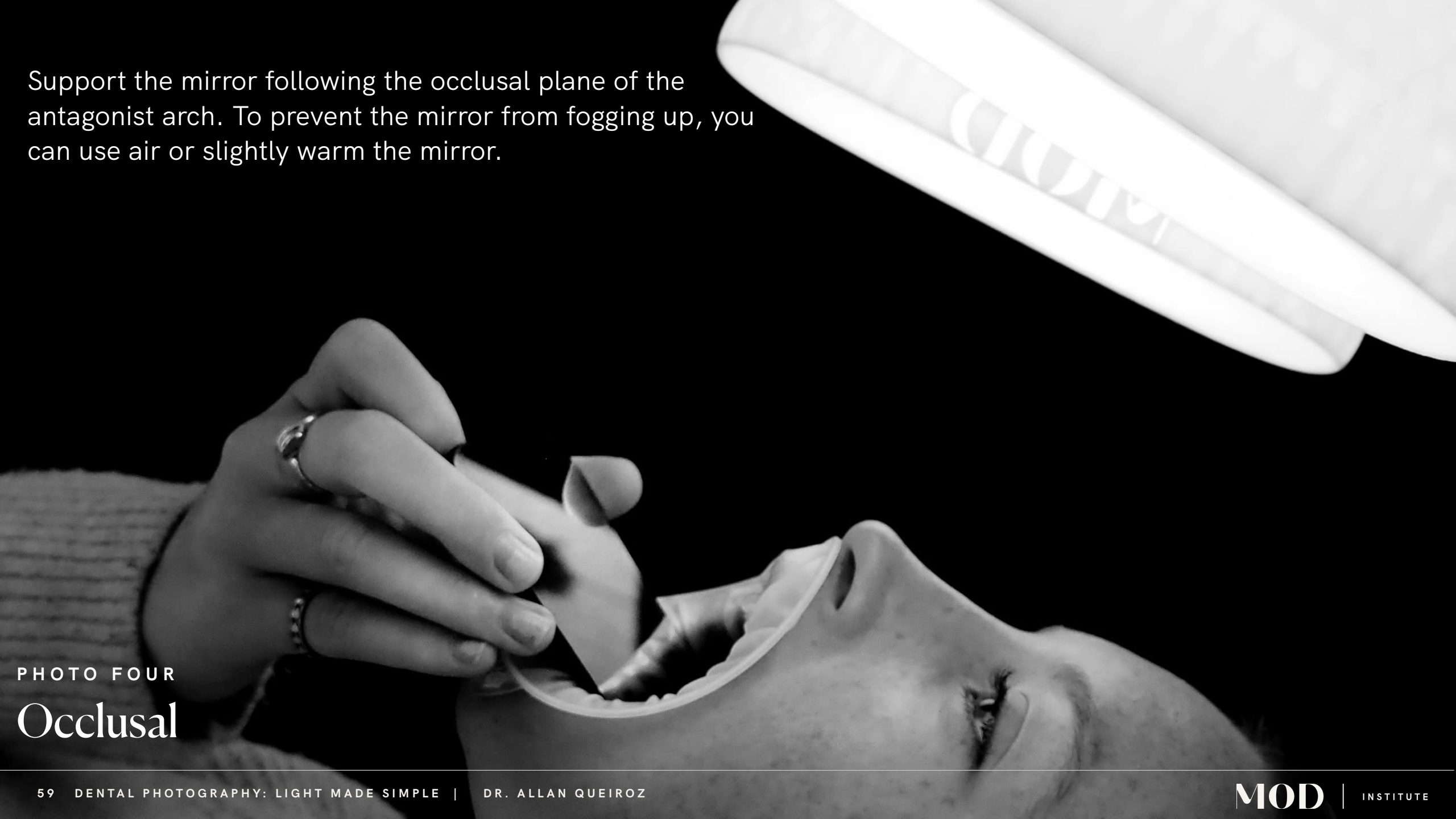


PHOTO FOUR
Occlusal

11. Face Photography



Photo 2

For facial photos, it is very important to keep the patient's head in the same position for the photo using retractors and the photo of the face smiling. The best tip is to start with the retractors first, then have the patient remove them without moving the head position, relax lips and then smile. Two photos in sequence to achieve this result, I will explain individually how to obtain each one.





PHOTO FIVE

Retracted

Photo Five

To obtain the same photograph as shown in Photo 5 you should position the flashes bilaterally in a frontal position towards the patient's smile. Pay attention to the removal of the 45 degree inclination that we had before, and rotate the camera to shot in vertical position. Another great tip is to use "C" mouth openers. The recommended distance from the softbox to the patient's face is approximately 15 - 20 cm. Settings for your camera and flash: Shutter 1/125 | f.22 | ISO 320 | Flash 1/2 (50%) | WB 5500 Kelvin.





PHOTO FIVE

Retracted



PHOTO SIX

Smiling Face

Photo Six

To obtain the same photograph as shown in “Photo 6” you should position the flashes bilaterally in a frontal position towards the patient's smile. Pay attention to the removal of the 45 degree inclination that we had before, and rotate the camera to shot in vertical position. Another great tip is to use "C" mouth openers. The recommended distance from the softbox to the patient's face is approximately 15 - 20 cm. Settings for your camera and flash: Shutter 1/125 | f.22 | ISO 320 | Flash 1/2 (50%) | WB 5500 Kelvin.



To make it easier, note that the patient does not tilt or move her head after removing the retractors, note that she keeps her hands still raised, and only smiles after removing the retractor. Using the same configuration we have the second photo and the patient's head maintains the same position and tilt, this detail is super important for planning in exocad



PHOTO SIX
Smiling Face

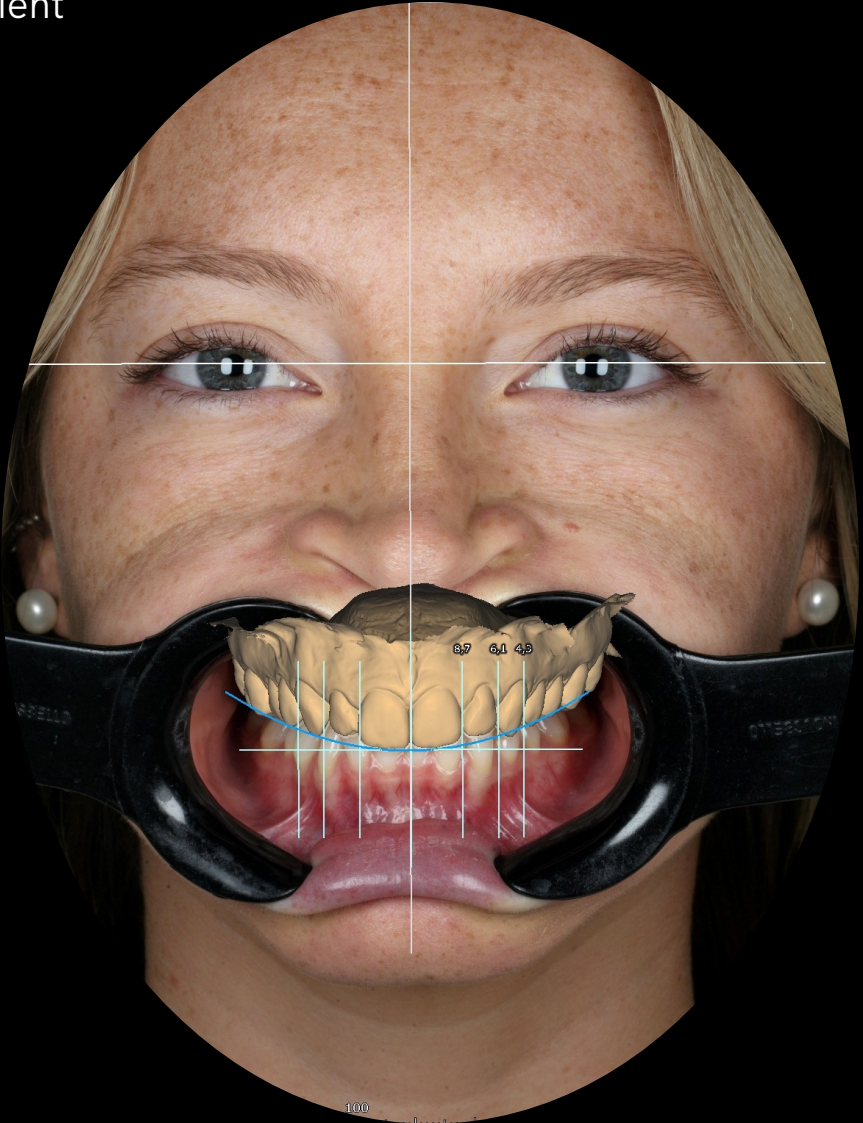
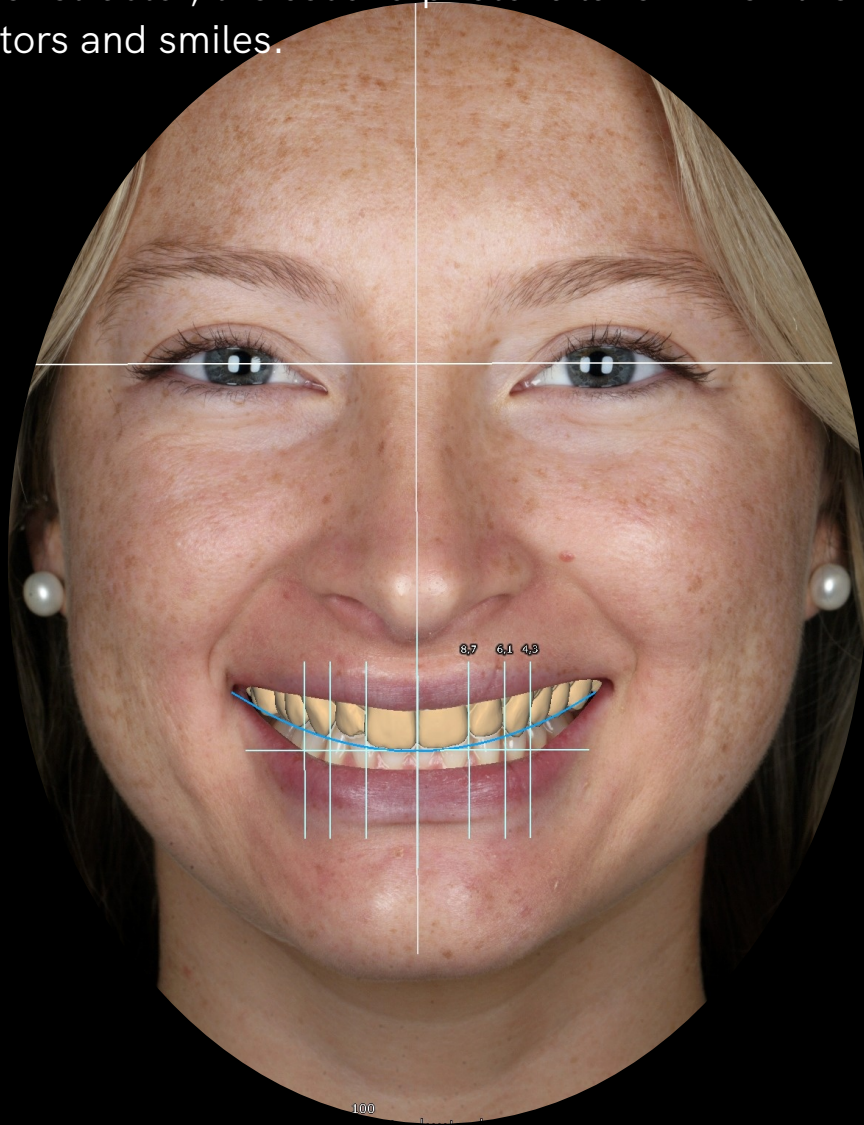
12. exocad & Photography



The facial photographs we take are extremely important for digital planning of aesthetic rehabilitations using the EXOCAD software. Using the photos and intraoral scanning, we superimpose the 2D and 3D files.



The big tip is to keep the patient's head in the same position for both photos, the first photo using the retractor, the second photo is taken when the patient removes the retractors and smiles.





Overlay of the 3D file (intraoral scan) with the patient's facial photographs, with and without lip retractor.

13. Artistic Smile Photography





PHOTO SEVEN

Artistic Smile

Photo Six

To obtain an extra-oral smile photograph as shown in “Photo 7” you should position the flashes bilaterally with a 45 degree inward tilt, towards the midline of the face. The recommended distance from the softbox to the patient’s face is approximately 10cm.

Set your camera and flash as follows: Shutter 1/125 | f.22 | ISO 200 | Flash 1/2 (50%) | WB 5500 Kelvin



You can use the flashes together with the Godox MF-DB Bracket or ask the patient to hold it.



PHOTO SEVEN
Artistic Smile



PHOTO EIGHT

Artistic Smile With White Background

Photo Eight

To obtain the same photograph as shown in “Photo 8” I am using the 2 flashes without the bracket, the white light is the flash behind the patient's face directed towards the camera and the second flash in front of the patient's smile, illuminating the smile (main light). The recommended distance from the softbox to the patient's face is approximately 10cm.

Settings for your camera and flash: Shutter 1/125 | f.22 | ISO 200 | Flash 1/2 (50%) | WB 5500 Kelvin.





Flash 1 - Just to create the white background

Flash 2 - Key Light

PHOTO EIGHT

Artistic Smile With White Background



PHOTO NINE

Artistic Smile with Black Background

Photo Nine

To obtain the same photograph as shown in “Photo 9” I am using just 1 flash without the bracket, the flash is illuminating the smile (main light). The black background it’s just the absence of light, if you're not close to any object you'll automatically get an infinite black, so you can use a wall or black surface to make it easier! The recommended distance from the softbox to the patient’s face is approximately 10cm. Settings for your camera and flash: Shutter 1/125 | f.22 | ISO 200 | Flash 1/2 (50%) | WB 5500 Kelvin





PHOTO NINE

Artistic Smile with Black Background

15. Models & Restorations Photography





PHOTO TEN

Models & Restorations with White Background

Photo Ten

To obtain the same photograph as shown in “Photo 10” I’m using 3 flashes, the 2 front ones as the main light, at a slight 45 degree angle, and the third flash to make the white cutout. The recommended distance from the softbox to the object is approximately 10cm.

Settings for your camera and flash: Shutter 1/125 | f.22 | ISO 200 | Flash 1/2 (50%) | WB 5500 Kelvin.

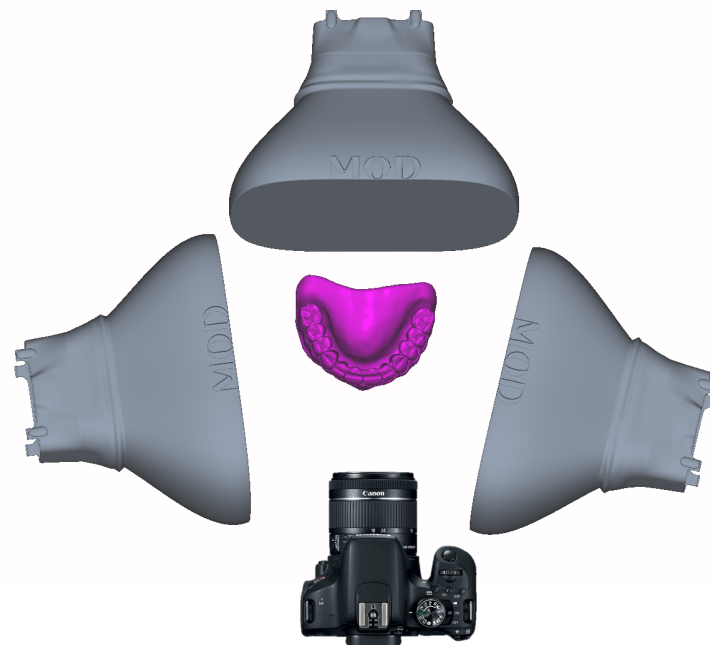
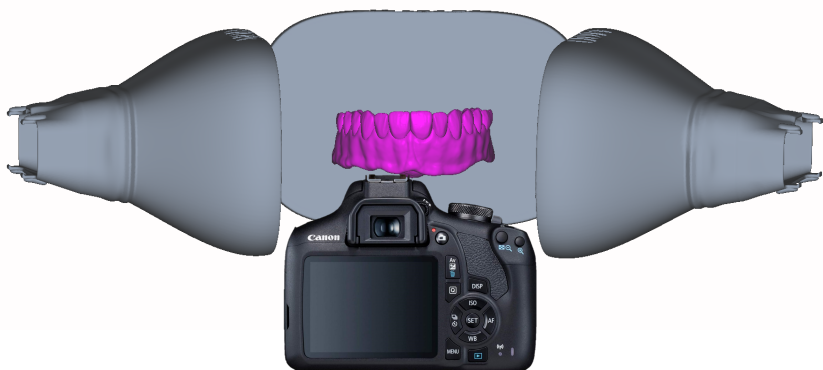




PHOTO TEN

Models & Restorations with White Background



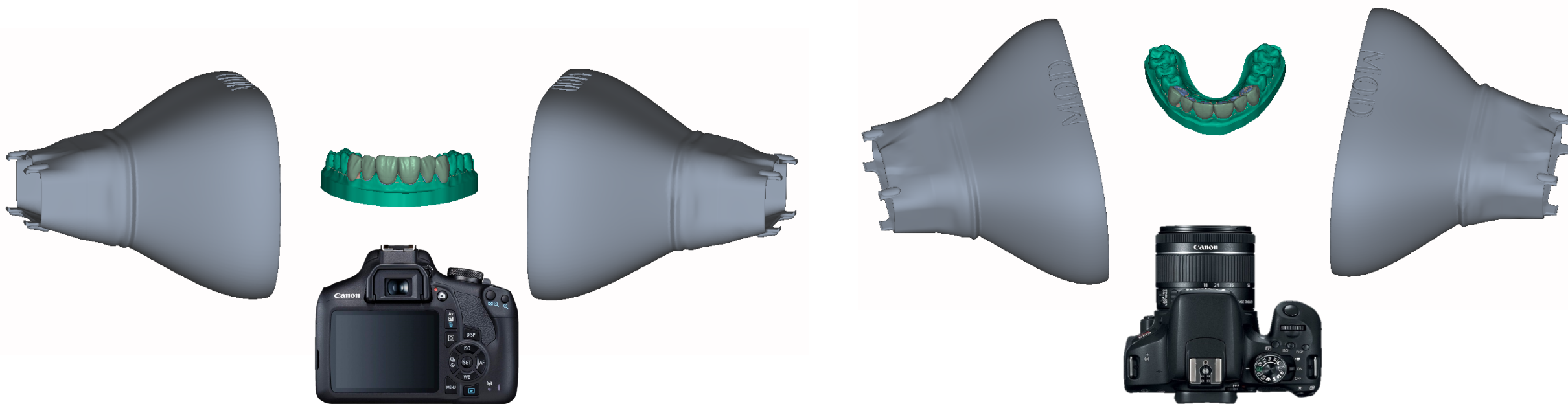
PHOTO ELEVEN

Models & Restorations with Black Background

Photo Eleven

To obtain the same photograph as shown in “Photo 11” I’m using 2 flashes, the main light, at a slight 45 degree angle, and since I don’t have any light behind me, my background automatically turns black, even easier if I have a black object like in the example photo below. The recommended distance from the softbox to the object is approximately 10cm.

Settings for your camera and flash: Shutter 1/125 | f.22 | ISO 200 | Flash 1/2 (50%) |WB 5500 Kelvin.



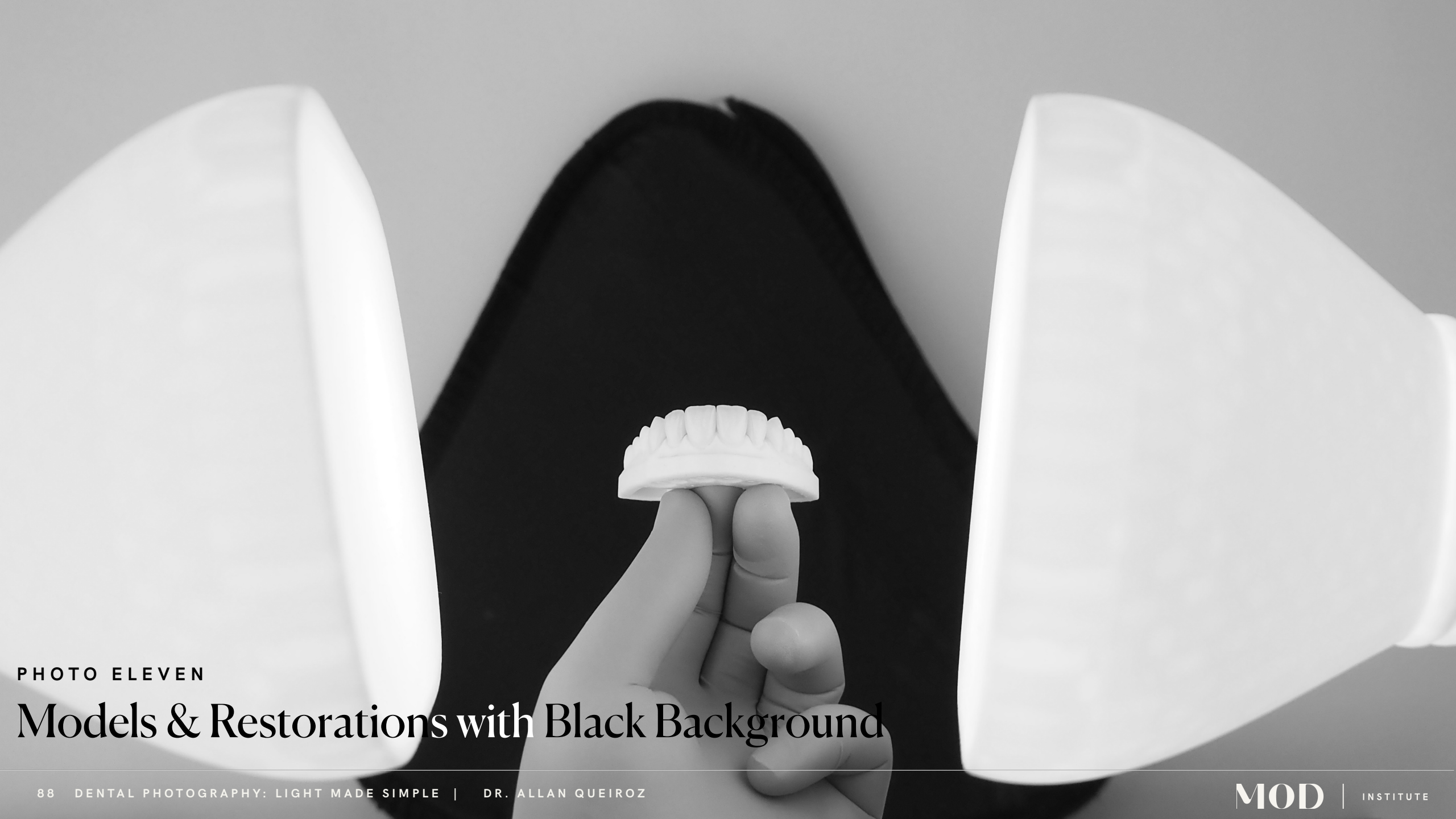


PHOTO ELEVEN

Models & Restorations with Black Background

The white cutout is nothing more than a third light behind the subject being photographed.



PHOTO 13

Models & Restorations
+ Mirror with White
Background

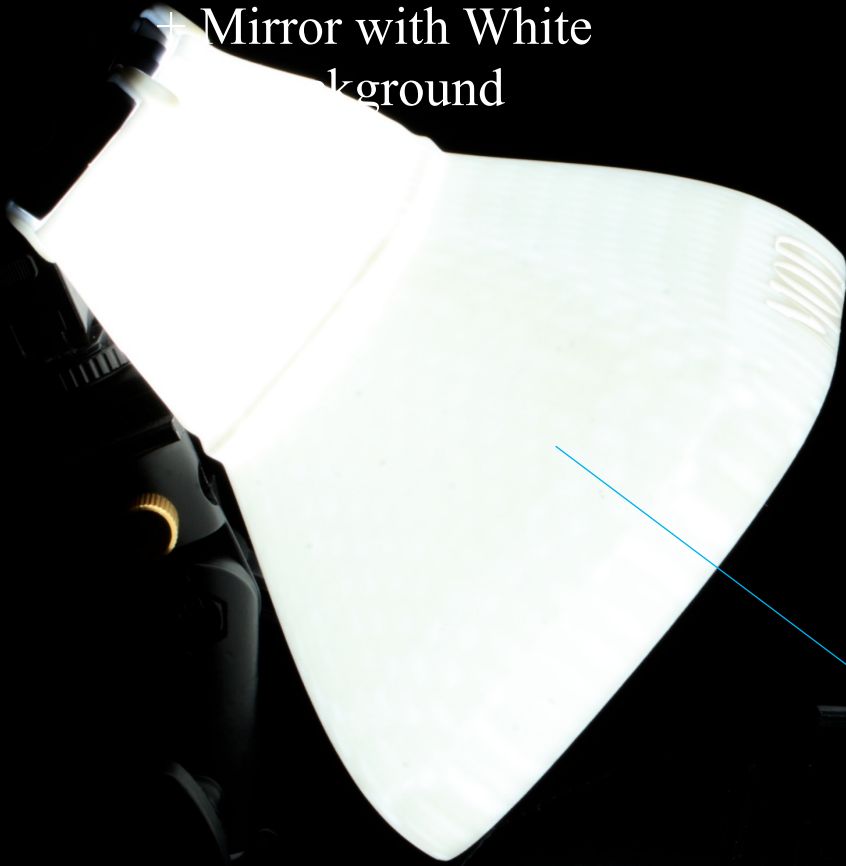


PHOTO 12

Models & Restorations
+ Mirror with Black
Background

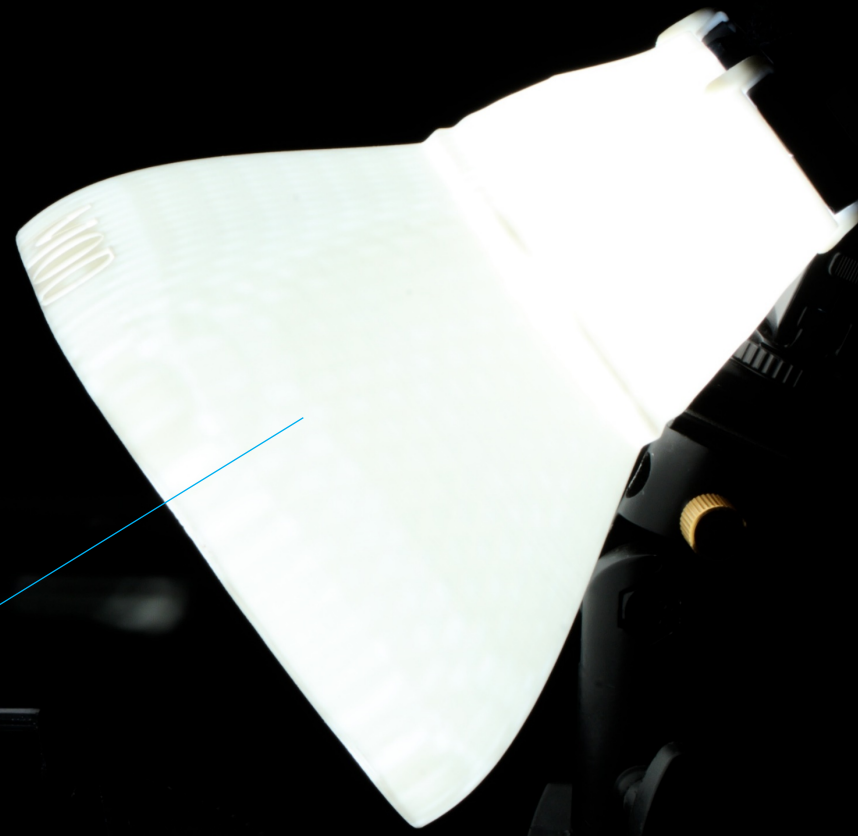




PHOTO 12 – Mirror with Black Background, here the key is the correct inclination of the softbox, to generate the reflection in the mirror and obtain the black cutout, 45 Degrees tilt, using only two flashes.

PHOTO 13
Models & Restorations +
Mirror with White
Background

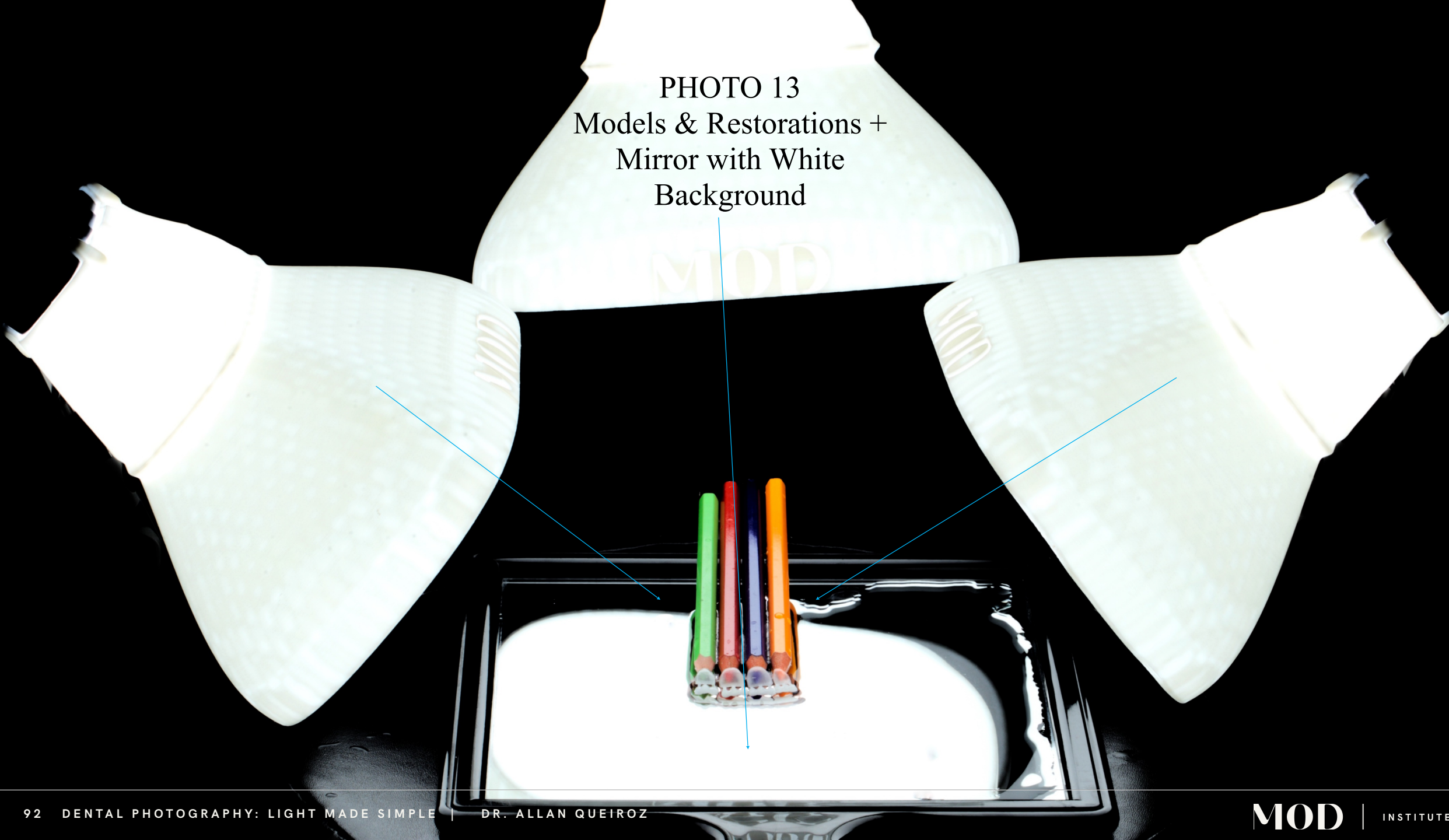




PHOTO 13 – The big tip for this photo in the mirror is the presence of the third flash positioned and tilted next to the mirror so that you can see it when you position yourself to take the click, thus we obtain the blank cut.

16. Post Production



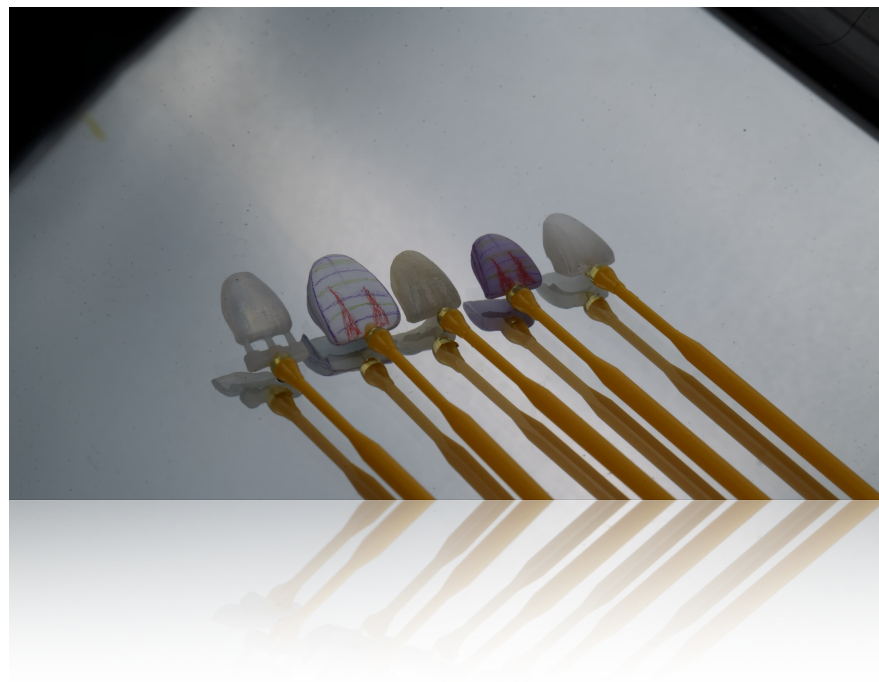
CHAPTER SIXTEEN: POST PRODUCTION



Snapseed is a free image editing app available for Android and iPhone users that we recommend. You can clean up, edit and adjust all aspects of your dental photography in the palm of your hands, without the need for more complicated or expensive software like Photoshop.

CHAPTER SIXTEEN: POST PRODUCTION

BEFORE



AFTER



An example of post production using Snapseed. In less than 5 minutes this photograph was edited by correcting exposure, removing blemishes and adjusting the background to 100% white.



Learn More

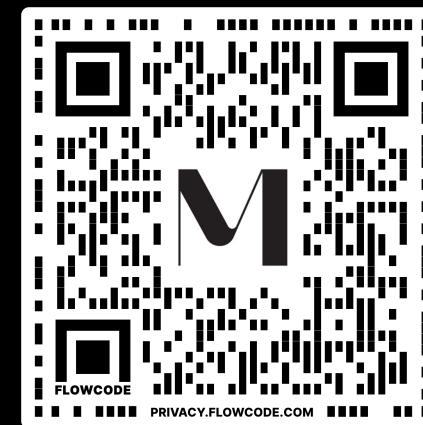
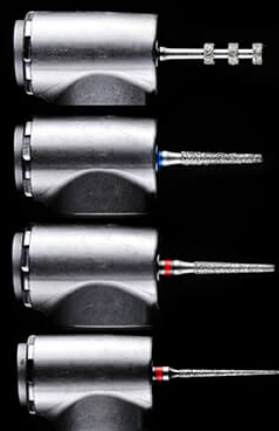
Scan QR code for video tutorial using Snapseed tools on Youtube.

RECOMMENDED LEARNING

Picture Perfect: Professional Dental Photography

Take your photography learning to a hand-on experience with this two-day course. Learn to take inspiring dental photographs with repeatable steps and workflows that take days to develop competency, not years. Taught by one of the world's leading dental photographers, Dr. Allan Queiroz, you'll delve into clinical photography techniques, both extraoral and intraoral. Additionally, you will learn to create artistic photographs of wax-up models, ceramic restorations, facial photos, smile photos, and intraoral images.

Scan to explore details:





Designed with Monday in Mind

Courses at The MOD Institute carefully emphasize practical hands-on learning and guidance from world-class instructors that combines modern technology with evidence-backed workflows and practices. It's the antithesis of an 8-hour lecture. From intraoral scanning to 3D printing and digital smile design, you'll enjoy a practical approach and experience exceptional technology, materials and equipment applied in practical, real-world scenarios.

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