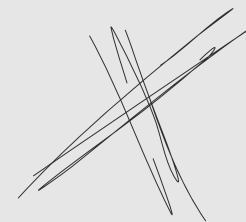


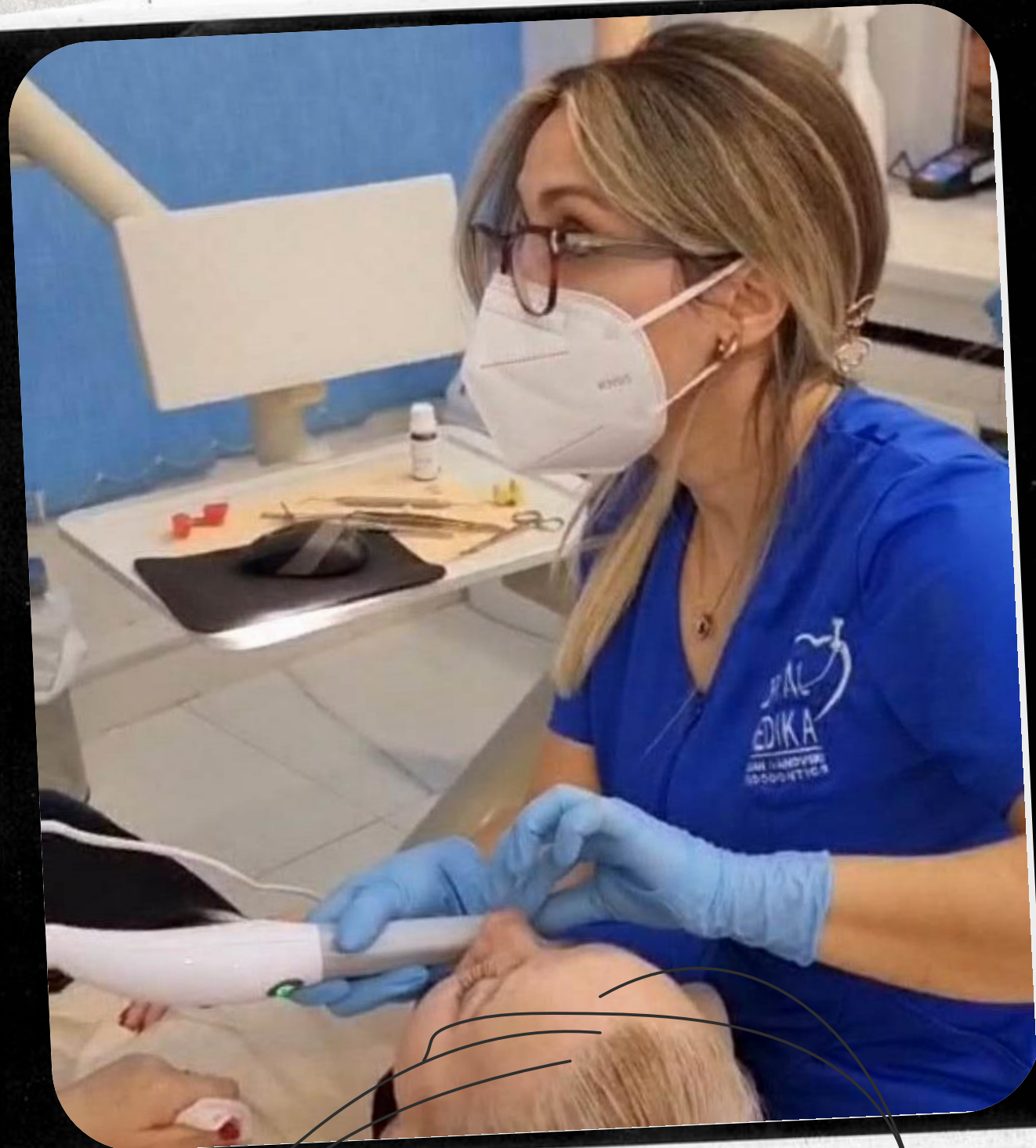
#26th Bass Congress,
Skopje, 2023

By
Julija Zarkova Atanasova



INTRAOURAL SCANNING

GUIDANCE FOR PREDICTABLE SUCCESS



HELLO!

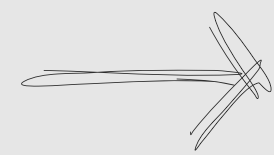


DENTAL MEDICINE, FMN,
"GOCE DELCEV"
UNIVERSITY STIP

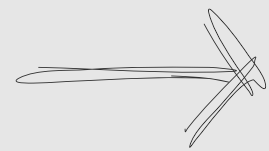
Different types of intraoral scanners



IOS application



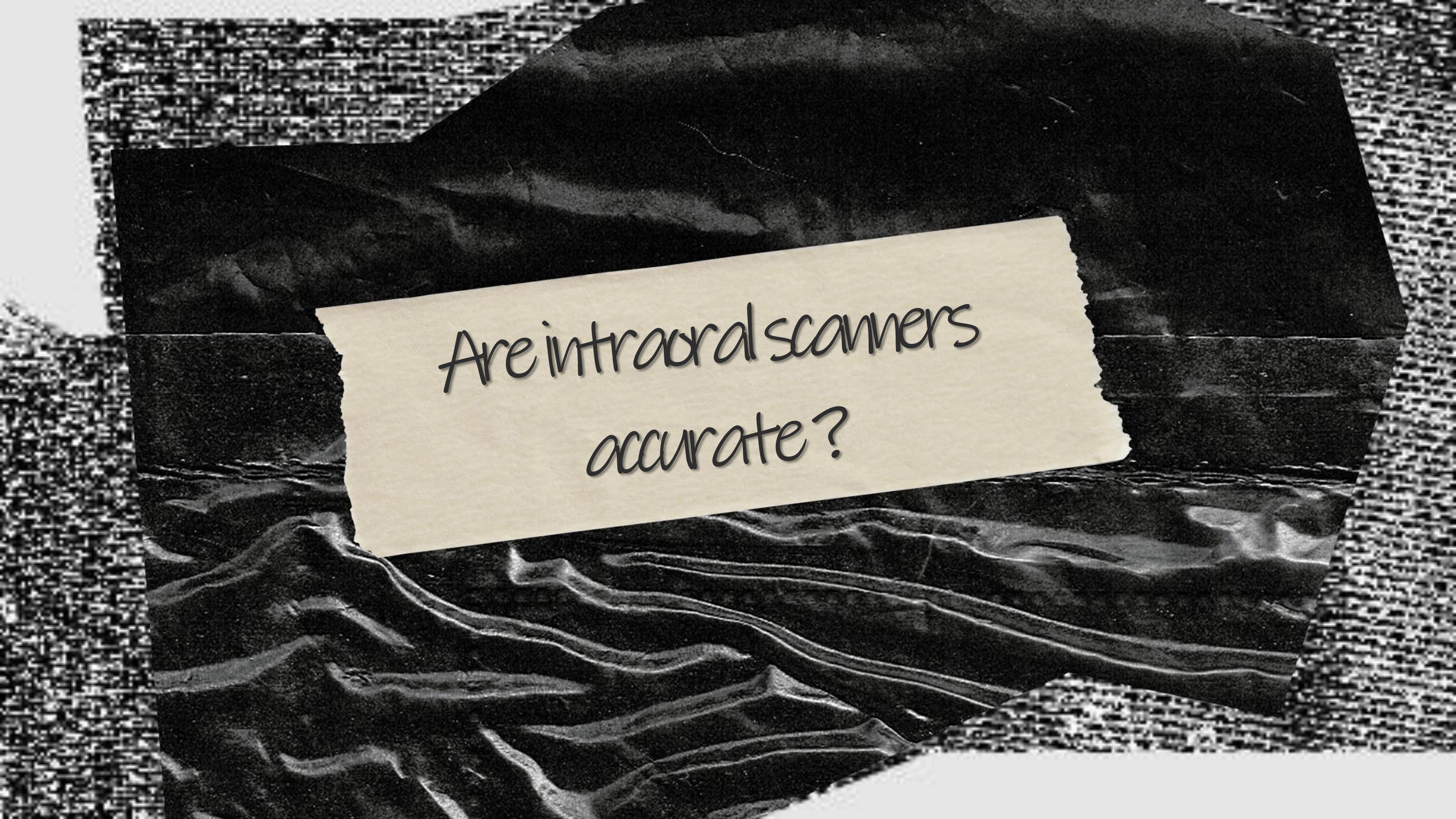
Crowns, bridges, inlays, onlays, veneers, Implant abutments (any kind of fixed restoration)



Partial removable and complete dentures (scan wash impression on printed denture)



Surgical guides, bite splints, sleep and orthodontic appliances, aligners, smile designs



Are intracard scanners
accurate?

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Scientific data

=ACCURACY =
trueness and precision
in vitro less in vivo

Data shows that difference in accuracy of different IOS systems is significant but not relevant because they are below clinical accessibility

International Journal of Environmental Research and Public Health 

Article

Intraoral Scans of Full Dental Arches: An In Vitro Measurement Study of the Accuracy of Different Intraoral Scanners

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Abstract: The aim of this in vitro study was to evaluate the accuracy of different intraoral scanners (IOS), according to different scanning strategies and to the experience of the operator. Six IOS setups were used in this study. Ten scans of a complete epoxy-resin-made maxillary dental arch were performed with each IOS, using four different scanning techniques (manufacturer-suggested scanning strategy, cut-out rescanning technique, simplified scanning technique, novel scanning technique). Scans were also performed by an expert operator in the field of digital dentistry. An operator with no experience in the field of intraoral scans performed 10 scans following each of the scanning strategy reference scanner to obtain a highly accurate digitized reference model. All the digital models were aligned with the reference model using a software aimed at comparing the STL files. A total of $n = 300$ scans were performed. Once the data were pooled, Medit i700 and Primescan obtained the best results in terms of both trueness and precision, showing no statistically significant differences ($p > 0.05$) to the first and the second scanning technique, Medit i700 scanner allowed to obtain the best values both in terms of trueness ($24.4 \pm 2.1 \mu\text{m}$ and $21.4 \pm 12.9 \mu\text{m}$, respectively) and precision compared to other IOS ($23.0 \pm 1.6 \mu\text{m}$ and $30.0 \pm 18.0 \mu\text{m}$, respectively). When considering the third scanning technique, Medit i700 recorded the best values in terms of trueness while Primescan recorded the best values in terms of precision ($24.0 \pm 2.7 \mu\text{m}$ and $26.8 \pm 13.7 \mu\text{m}$, respectively). When considering the two operators, significant differences between the two were found only with Medit i700 ($p < 0.001$). The examined IOS showed statistically significant differences in terms of trueness and precision. The used scanning strategy is a factor influencing the accuracy of IOS. Considering the expertise of the operators, clinically scanning strategies are not operative sensitive in terms of accuracy.

Keywords: intraoral scanner; full dental arch; accuracy; trueness; precision; scanning strategies

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1. Introduction
In recent years, digital technologies have become widely used in dental practice, resulting in a consistent evolution and transformation of clinical workflows. The digi...

ORIGINAL ARTICLE

ACCURACY OF INTRAORAL SCANNERS VERSUS TRADITIONAL IMPRESSIONS: A RAPID UMBRELLA REVIEW

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ABSTRACT
Purpose
This study aimed to (1) report the trueness and precision of intraoral scanning (IOS) in dentistry based on recent secondary sources and to (2) appraise the reporting quality of the titles and abstracts of the included literature.
Materials and methods
This rapid overview searched the PubMed/Medline and Cochrane Database of Systematic Reviews in March 2021 to identify reviews reporting on the accuracy of IOS. The reference list from the eligible studies was also screened for identification of other potentially eligible studies. The inclusion criteria consisted of English language systematic reviews or meta-analyses published between 2019

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KEYWORDS
Accuracy, Intraoral scan, Digital impression, Precision, Publishing standards, Trueness

ADVANTAGES AND DISADVANTAGES

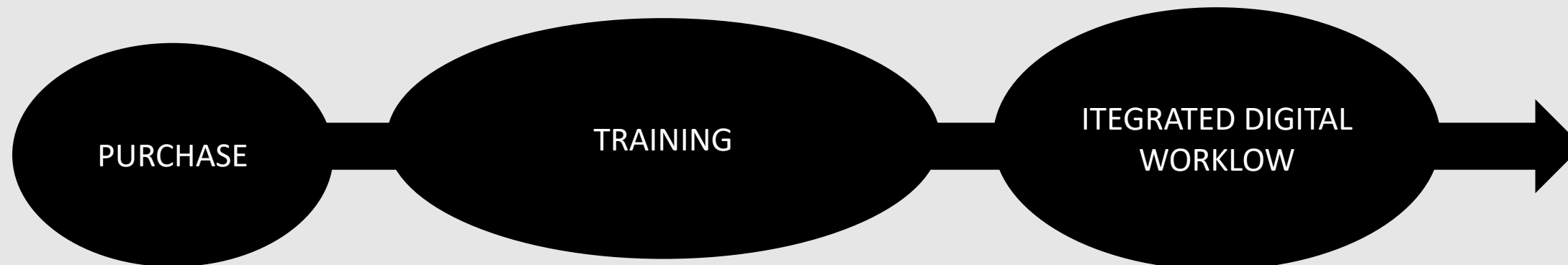
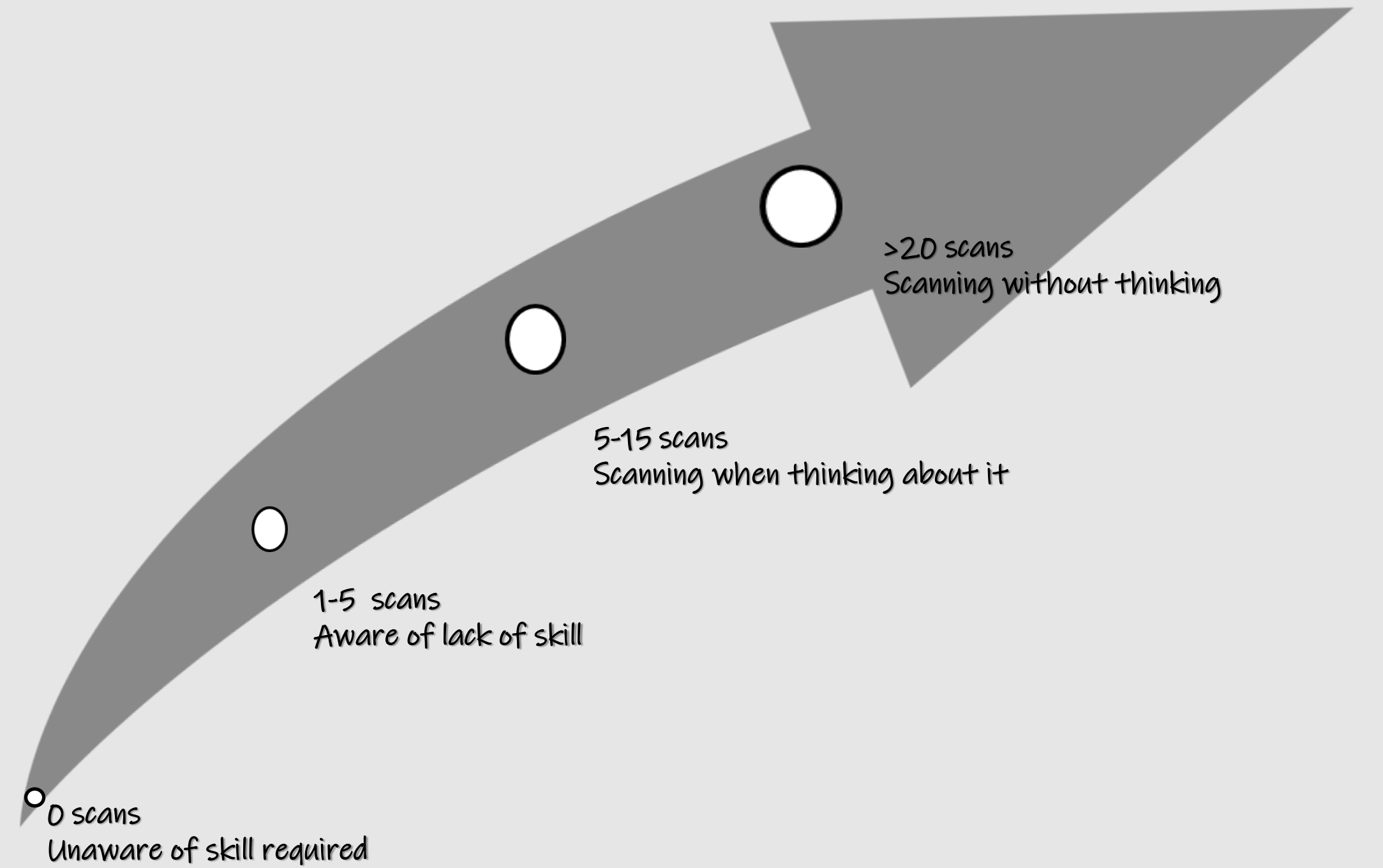


- Difficulty detecting deep margins of prepared teeth
 - Learning curve
 - Cost



- Less patient discomfort
 - Time efficient
 - Simplified clinical procedures
- no more plaster cast and storage
- Better communication with the lab and patient

The learning curve



"REMEMBER"

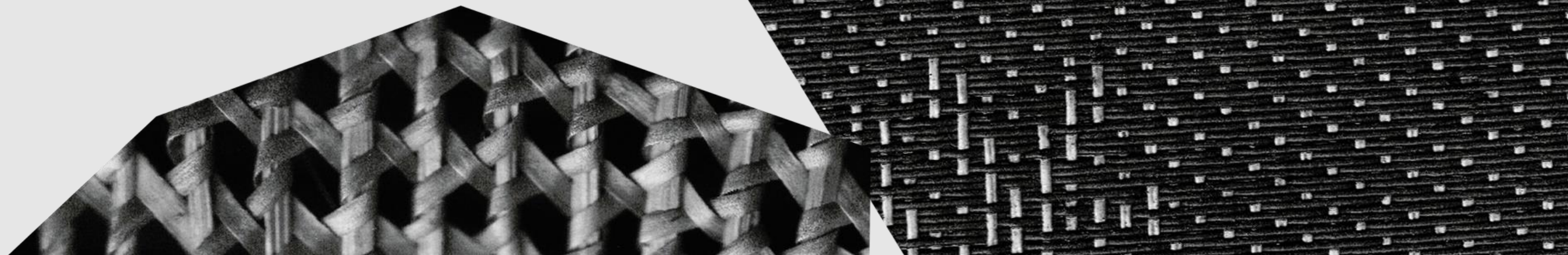
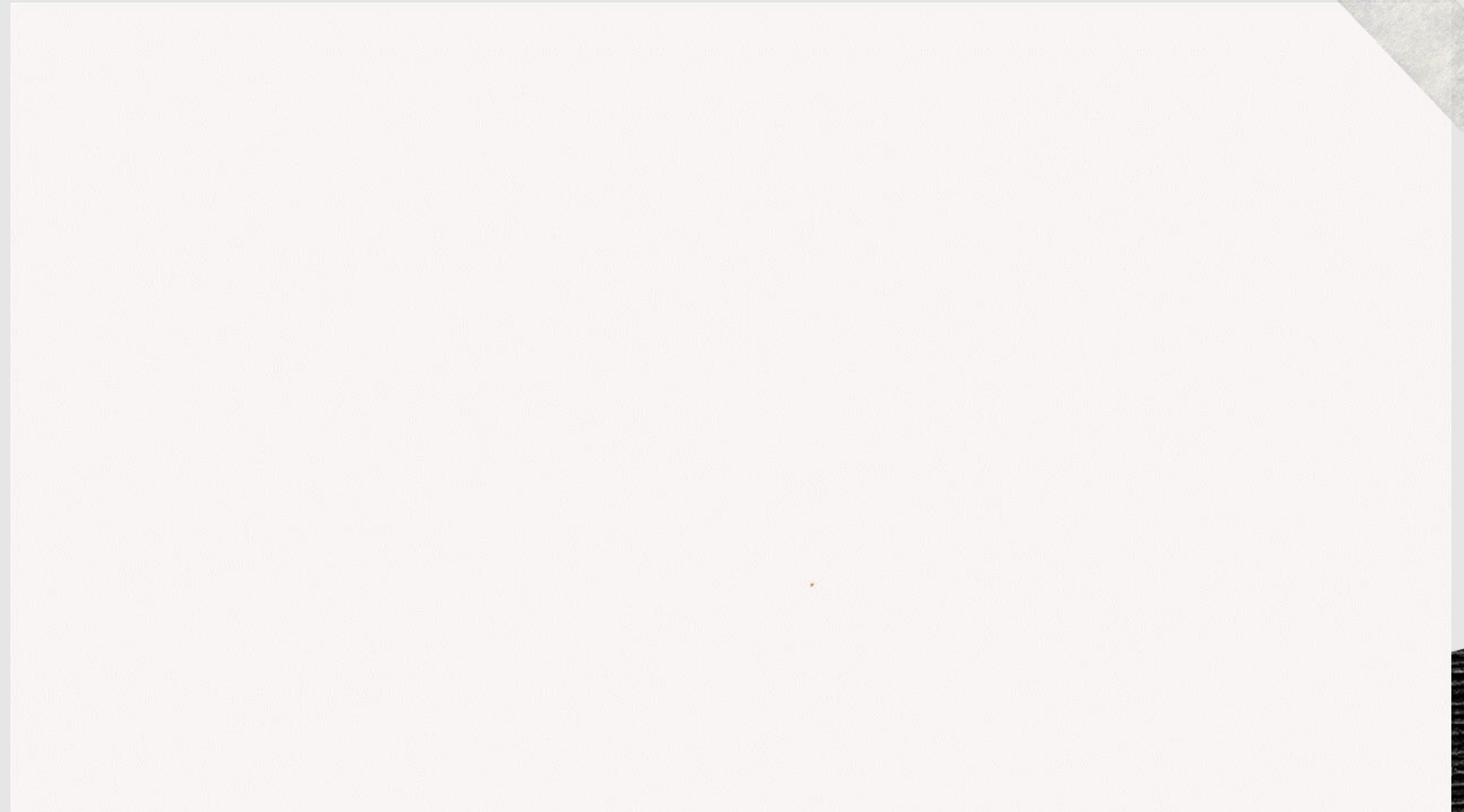
Leave your wrist relaxed

Make smooth, steady and gradual movement, don't rush!

Support the scanner with non holding hand

Don't stop and start constantly

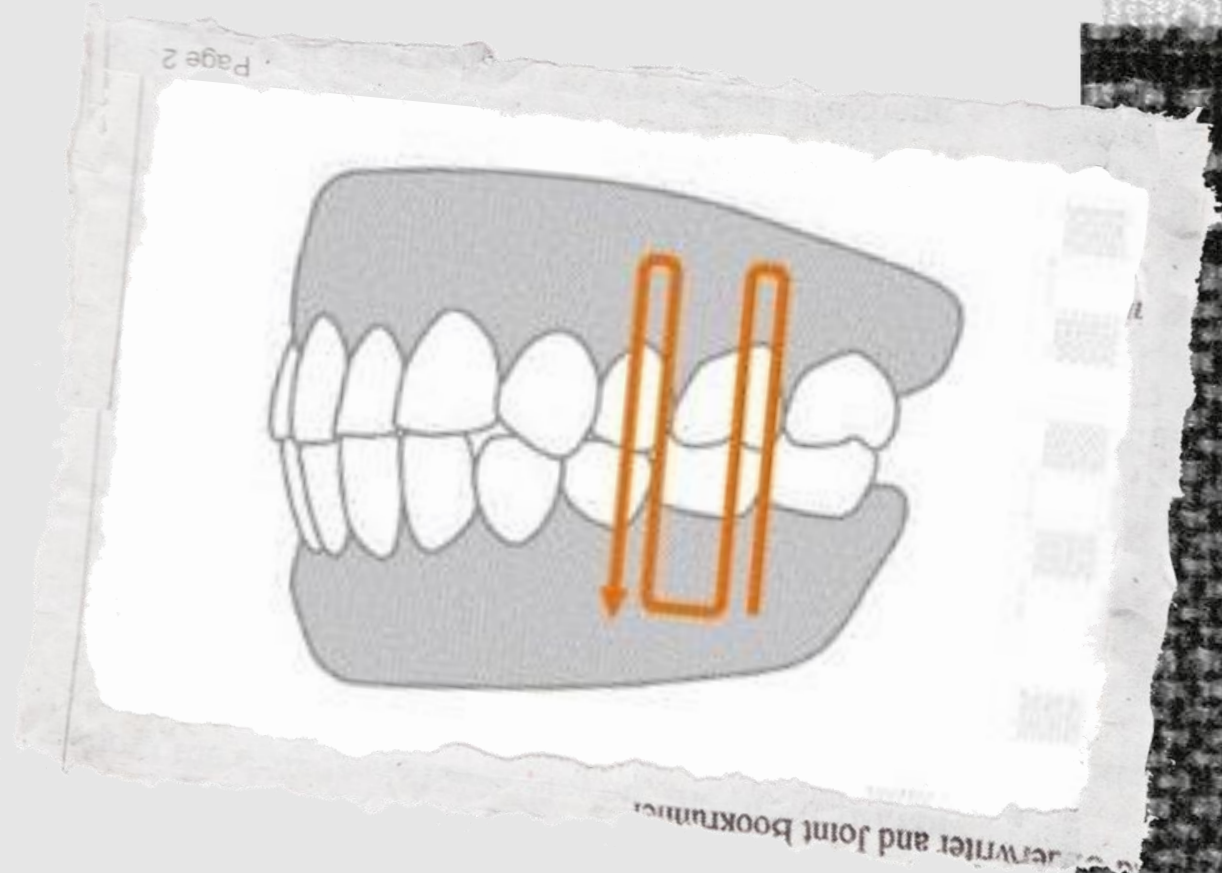
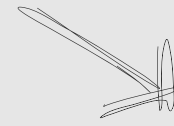
Keep the scanning object in the middle of the marked box



"All scanners are not the same"

(Follow the instructions !!!)

Bite registration plan

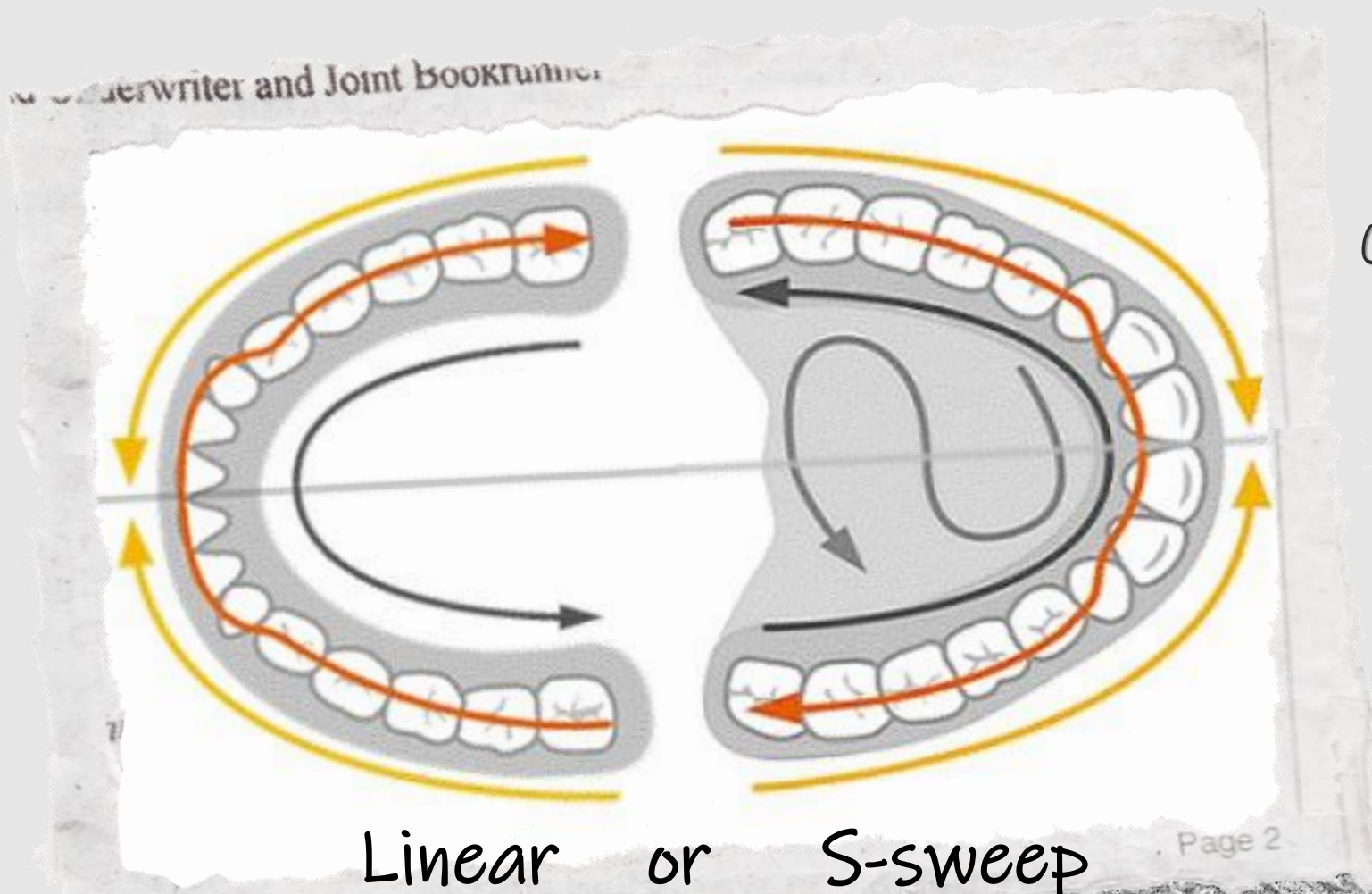


Distance of scanning



Scan path strategy

(exception with smart scanning)



Linear or S-sweep

PATIENTS

CASES

Filter by search



SORT BY: LAST CASE CREAT...

	Yavuzhan Turk 29.12.1977	<input type="checkbox"/>	
	sfgh ggh	<input type="checkbox"/>	
	Derya Doruk	<input type="checkbox"/>	
	Direct Scan 16.04.2021	<input type="checkbox"/>	
	Burak xx	<input type="checkbox"/>	
	Fatih Caglak	<input type="checkbox"/>	
	Deniz Huseyin	<input type="checkbox"/>	
	Direct Scan 18.03.2021	<input type="checkbox"/>	
	saliha kartal	<input type="checkbox"/>	

Create New Patient

Patient ID: * ID000063 (auto generated)

First Name: *

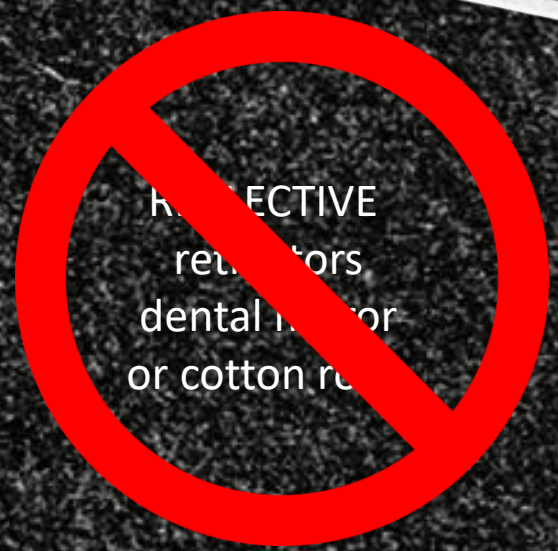
Last Name: *

Date of Birth: DD MM YYYY

Gender: Male Female Not Specified

Notes:

- Start Scanning +
- Create New Patient +
- Create New Case +



"soft tissue management"

- Lips and cheeks retraction
- Moving the tongue out of the way
- Marginal gingiva retraction



"Gingival retraction"

1. Dual cord technique

First 000 or 00

Second 0 or 1..



2. Soft tissue laser or tissue trimmer

3. Retraction paste

4. Teflon tape

YOU CAN SCAN ONLY WHAT YOU SEE!





"moisture control"

(scanning dry field is crucial)

Saliva -high reflection and bubbles

Blood- covers the preparation
margin can't scan trough



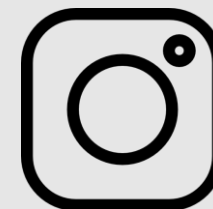
EVERETHING IS POSSIBLE,
THE IMPOSSIBLE JUST
TAKES LONGER

[Dan Brown-](#)

Thank you for
your attention!!!



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@JULIJA.ZARKOVA



@JULIJA ZARKOVA ATANASOVA