



Prof Dr Niels Salles Willo Wilhelmsen
niels_willo@yahoo.com
(47) 99921-9911
nwdentistas.com



Por que glide path ?

"Muitos estudos mostram uma economia considerável de tempo e resultados mais consistentes (menos dependência do nível de habilidade do operador) da modelagem do canal mecanizado versus instrumentação manual"

Erros e fraturas ocorrem mais durante o preparo manual até a lima #15

Cheung GS, Liu CS. A retrospective study of endodontic treatment outcome between nickel-titanium rotary and stainless steel hand filing techniques. *J Endod.* 2009 Jul;35(7):938-43

Yin X, Cheung GS, Zhang C, Masuda YM, Kimura Y, Matsumoto K: Micro-computed tomographic comparison of nickel-titanium rotary versus traditional instruments in C-shaped root canal system. *J Endod.* 2010 Apr;36(4):708-12

Schäfer, E. & Bürklein, S. Impact of nickel-titanium instrumentation of the root canal on clinical outcomes: a focused review. *Odontology* (2012) 100: 130.

Vaudt J, Bitter K, Neumann K, Kielbassa AM. Ex vivo study on root canal instrumentation of two rotary nickel-titanium systems in comparison to stainless steel hand instruments. *Int Endod J.* 2009 Jan;42(1):22-33

Ungerechts C, Bårdsen A, Fristad I: Instrument fracture in root canals - where, why, when and what? A study from a student clinic. *Int Endod J.* 2014 Feb;47(2):183-90

Por que glide path mecanizado ?

As desvantagens da realização do glide path com instrumentos manuais:

- Maior tempo
- Risco de desvios
- Desgaste (clinico / paciente / instrumento)

Vantagens da realização do glide path mecanizado X instrumento manual

- Menor tempo operatorio
- Menor risco de iatrogenias (degraus, desvios e transporte apical)
- Menor fadiga do operador
- Menor extrusão de debris apicalmente
- Redução da dor pós operatoria
- Técnica fácil de aprender

Por que glide path mecanizado ?

Desvantagens do uso de instrumentos de NiTi para realização do glide path

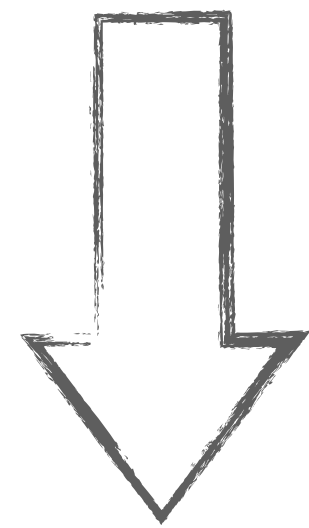
- Custo adicional (instrumentos manuais)
- Menor sensação táctil
- Risco de fratura



R-PILOT™

- Secção transversal com dupla hélice
- Corte no sentido anti-horário

Reciprocando



Diminui o risco de fratura por fadiga cíclica

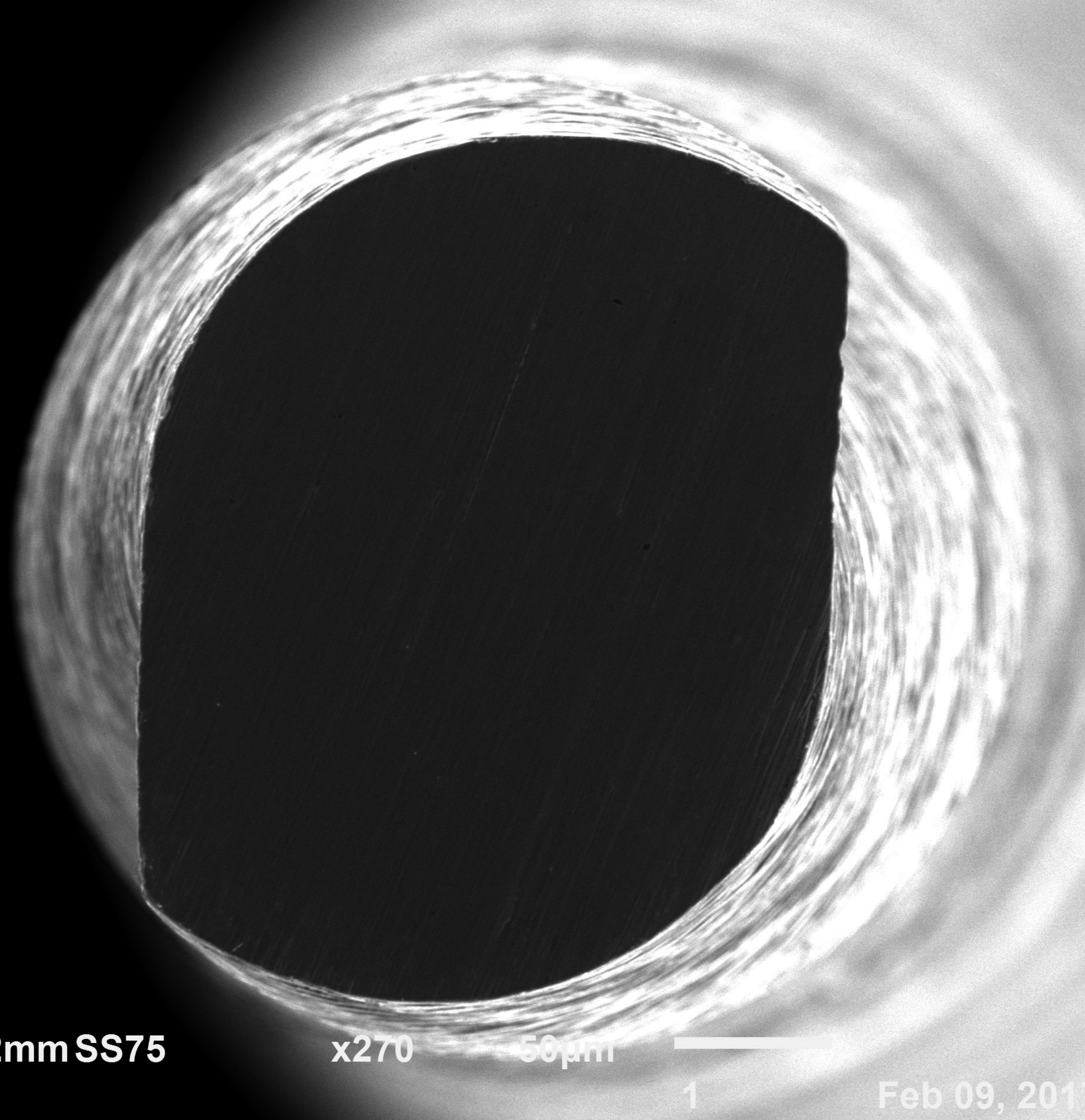
12mm SS75

x270

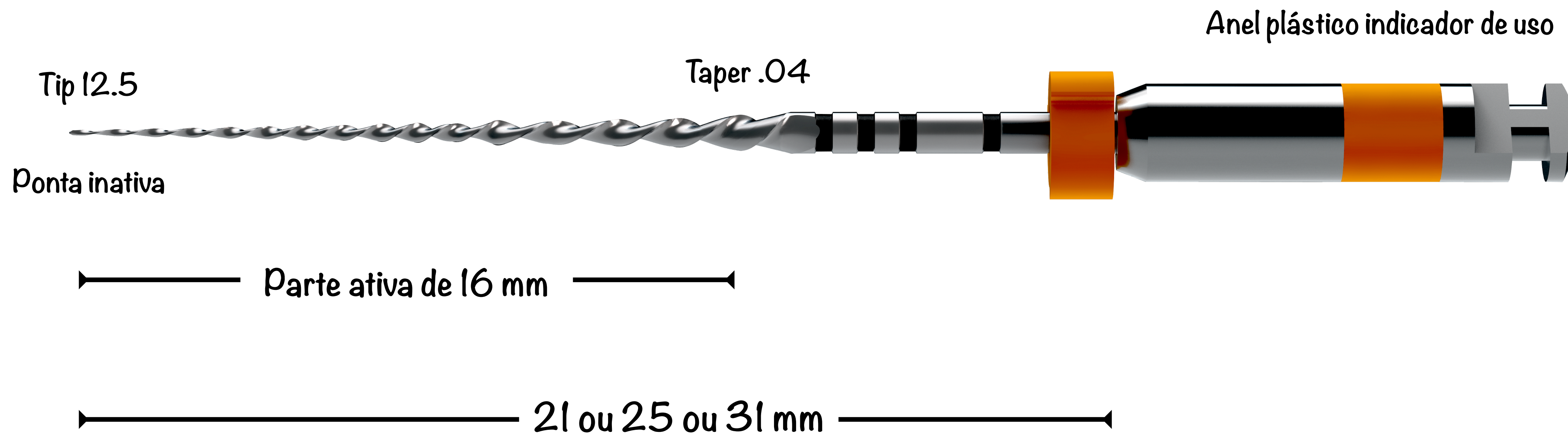
50µm

1

Feb 09, 2017



R-PILOT™





Suas propriedades somam geometria e uso intenso

Aço

NiTi



Blue



Cyclic fatigue resistance of R-Pilot, HyFlex EDM and PathFile nickel-titanium glide path files in artificial canals with double (S-shaped) curvature

G. Uslu¹, T. Özyürek¹ , K. Yılmaz²  & M. Gündoğar³

¹Department of Endodontics, Faculty of Dentistry, Ondokuz Mayıs University, Samsun; ²Çorum Oral and Dental Health Centre, Çorum; and ³Department of Endodontics, Faculty of Dentistry, Medipol University, İstanbul, Turkey

*** Combinação balanceada para segurança e eficiência

"R-Pilot utilizada no movimento recíprocante demonstrou maior resistência a fadiga cíclica quando comparada com as limas Hyflex EDM (10/.05) e PathFile (19/.02) quando empregadas em canais artificiais com formato em "S" "



Instruções de uso:

- Utilização prévia de um instrumento manual #8 (odontometria)
- Canal irrigado
- Colocar na programação Reciproc / Reciproc Blue
- Acionar após a ponta do instrumento estiver no canal
- Não realizar pressão (o instrumento avança sozinho)
- Movimentos pequenos de introdução no canal (max. 3 mm)
- Remova e limpe o instrumento a cada 3 movimentos ou quando sentir resistência



Resumindo:

Segurança

- Menor risco de fratura do instrumento
- Redução da fadiga cíclica
- Uso simples

Previsibilidade

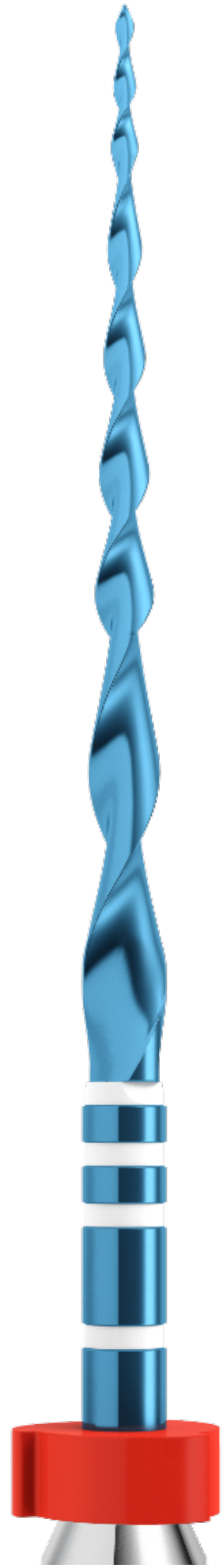
- Apenas um instrumento
- Maior respeito a anatomia do canal

Ganho de tempo

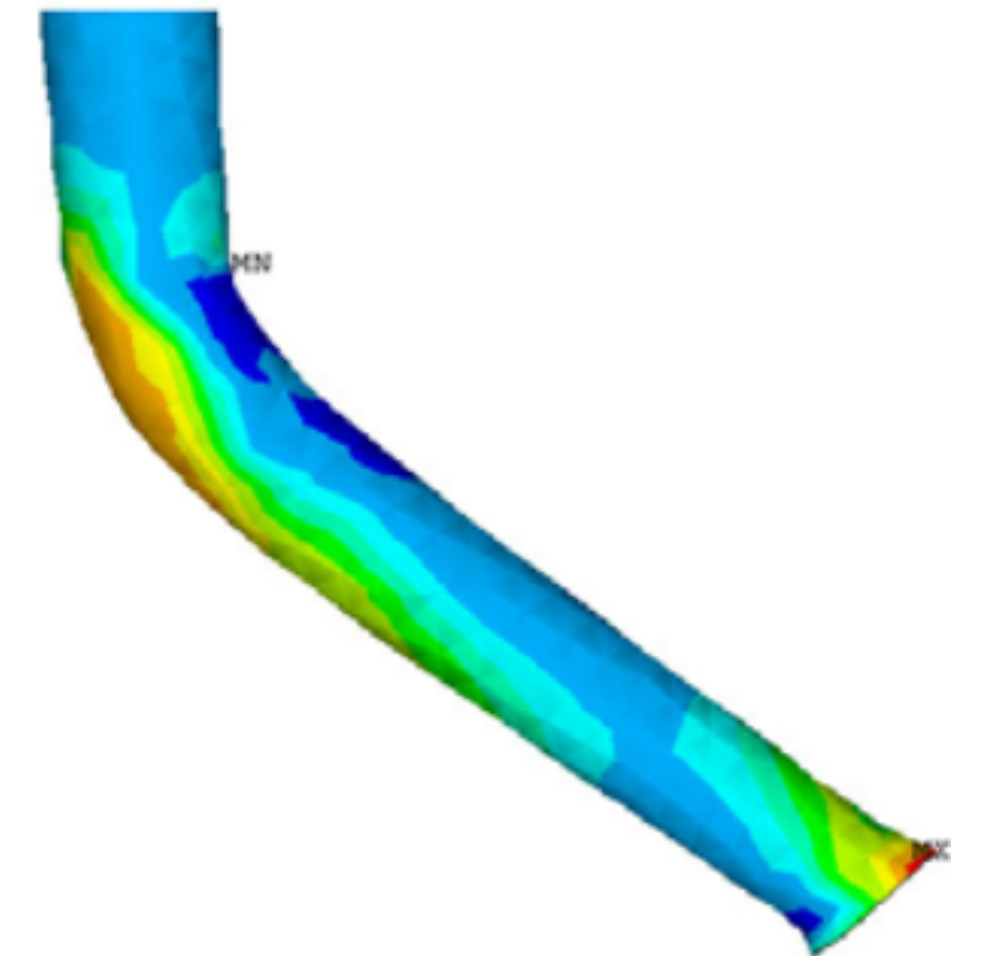
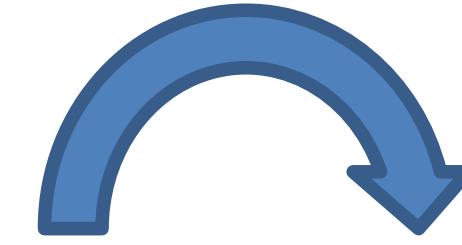
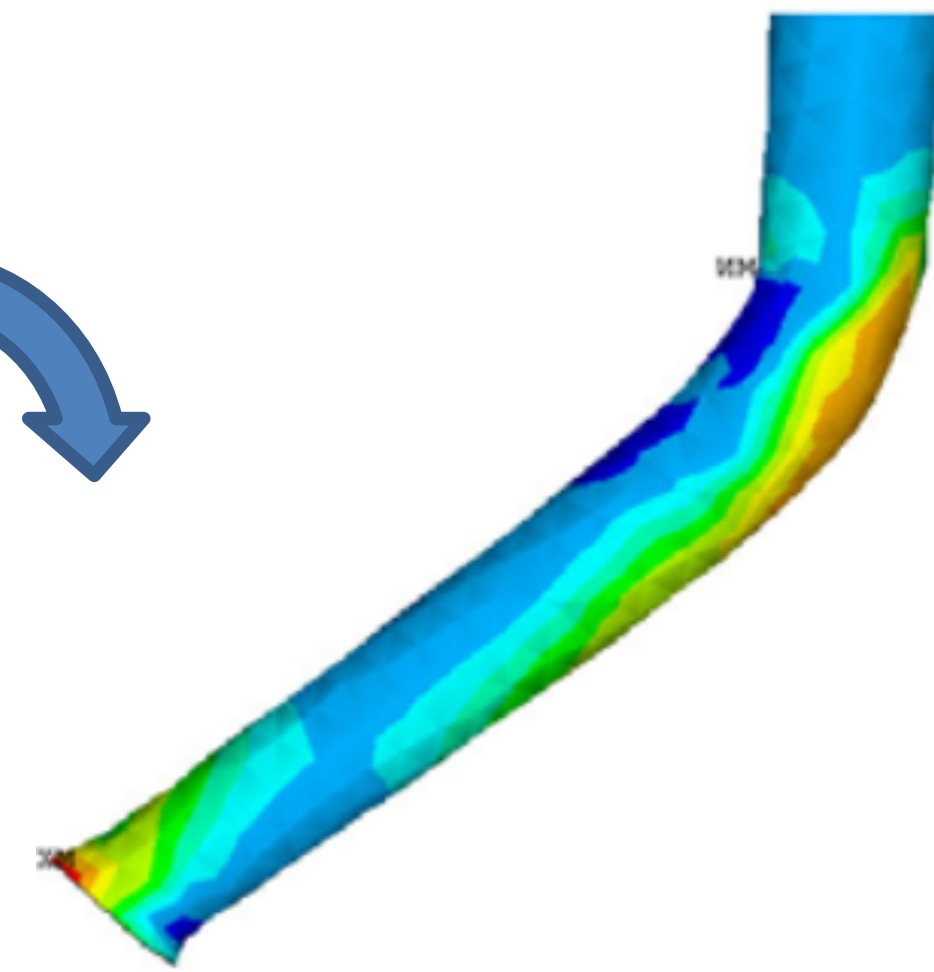
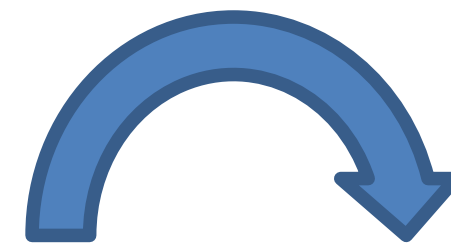
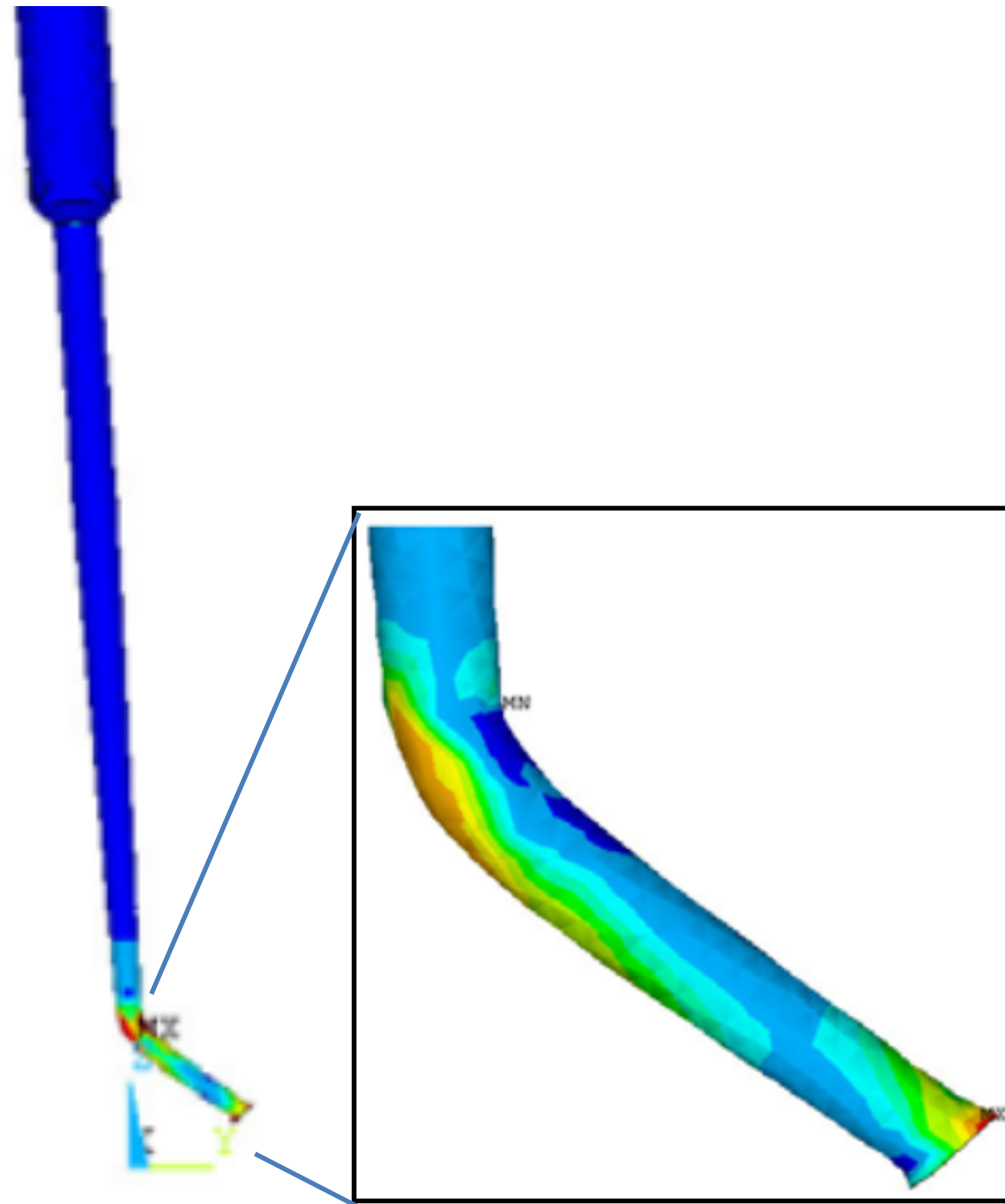
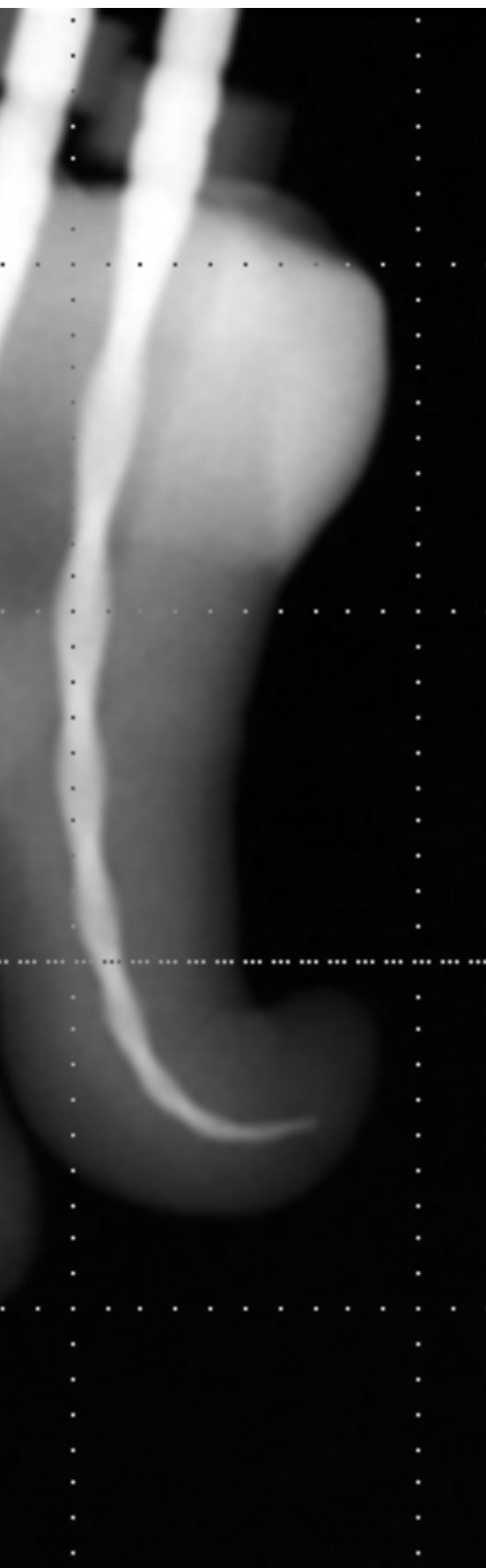
- Instrumento já estéril
- Necessidade de menos instrumentos
- Mesma programação



 **RECIPROC**[®] *blue*



Fadiga cíclica



Evaluation of the Impact of Raw Materials on the Fatigue and Mechanical Properties of ProFile Vortex Rotary Instruments

Yong Gao, PhD, James L. Gutmann, DDS, Kevin Wilkinson, BS,
Randall Maxwell, BS, and Dan Ammon, PhD

JOE — Volume 38, Number 3, March 2012

Fatigue

1

0.8

0.6

0.4

0.2

0

..... S-S

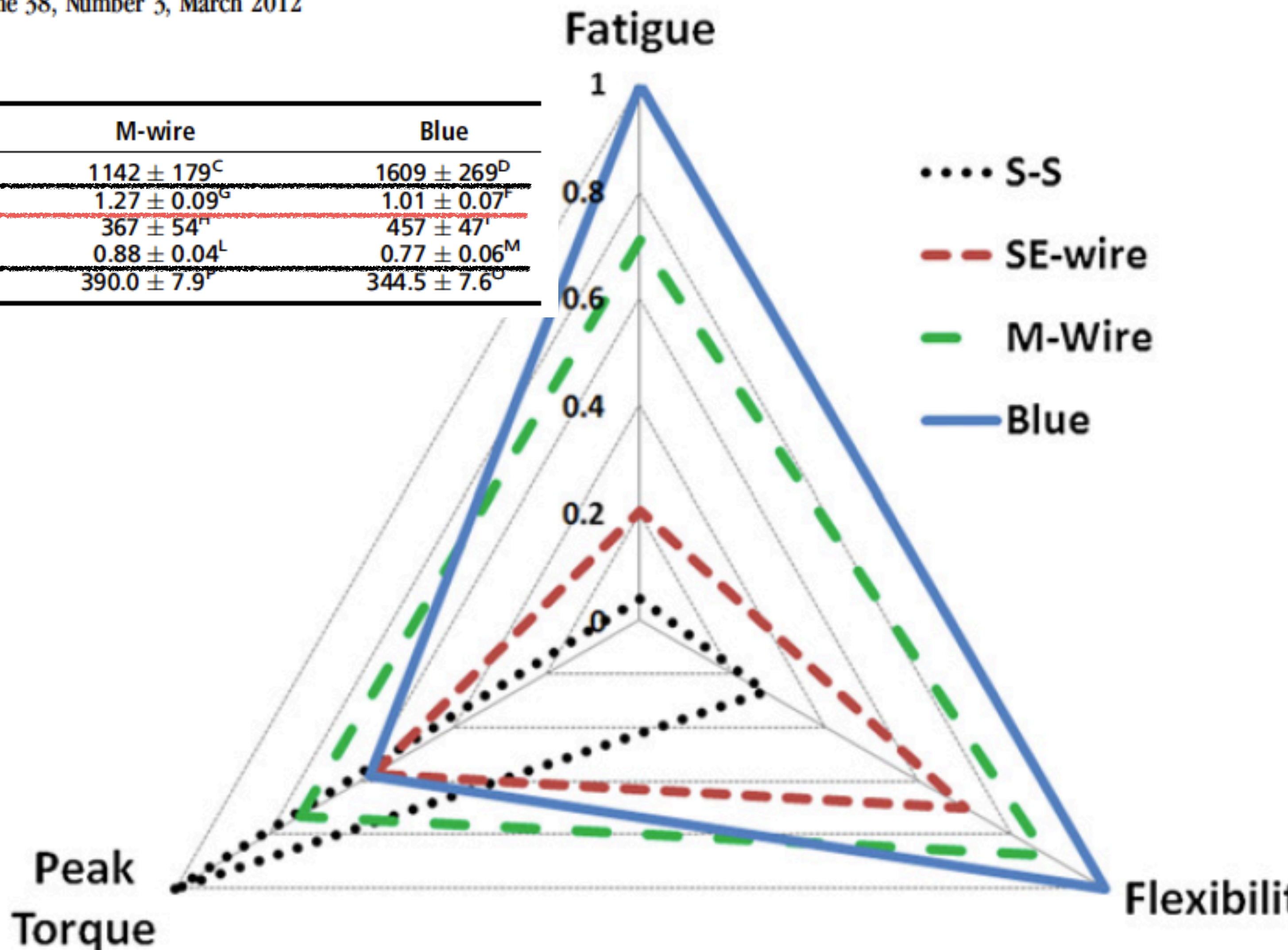
--- SE-wire

--- M-Wire

— Blue

Peak
Torque

Flexibility



S-S

SE-wire

M-wire

Blue

Fatigue life (cycle)

67 ± 11^A

331 ± 102^B

1142 ± 179^C

1609 ± 269^D

Peak torque in twist (N·cm)

1.74 ± 0.19^E

1.00 ± 0.10^F

1.27 ± 0.09^G

1.01 ± 0.07^F

Degree of rotation (°)

368 ± 69^I

385 ± 32^I

367 ± 54^I

457 ± 47^I

Flexibility (N·cm)

2.87 ± 0.30^J

1.10 ± 0.08^K

0.88 ± 0.04^L

0.77 ± 0.06^M

Vickers microhardness (VHN)

559.5 ± 9.1^N

352.6 ± 10.5^O

390.0 ± 7.9^P

344.5 ± 7.6^Q

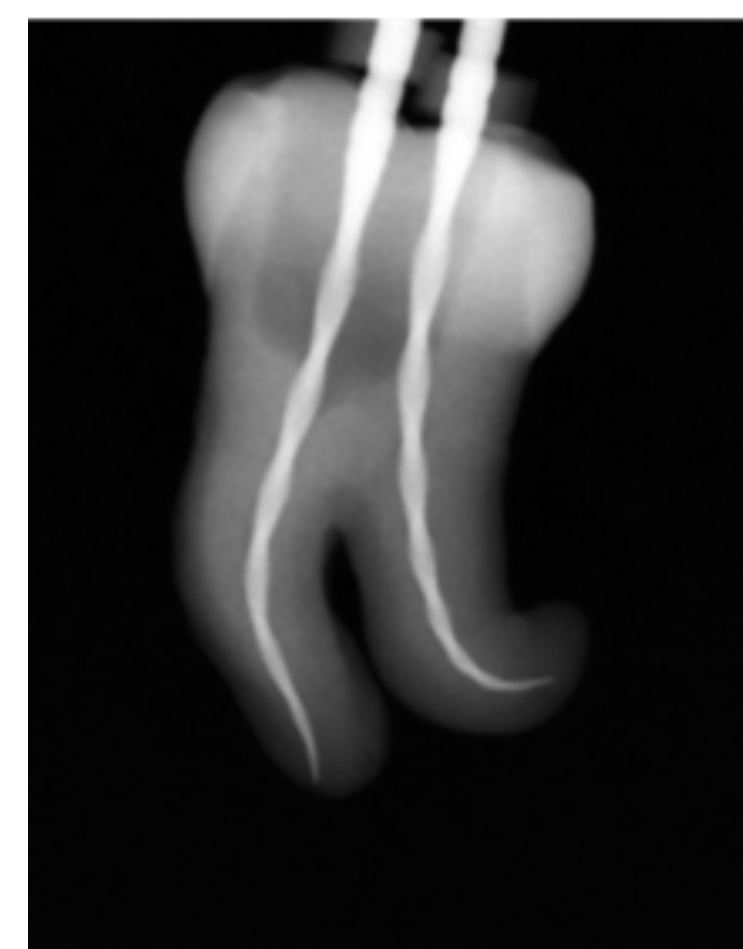
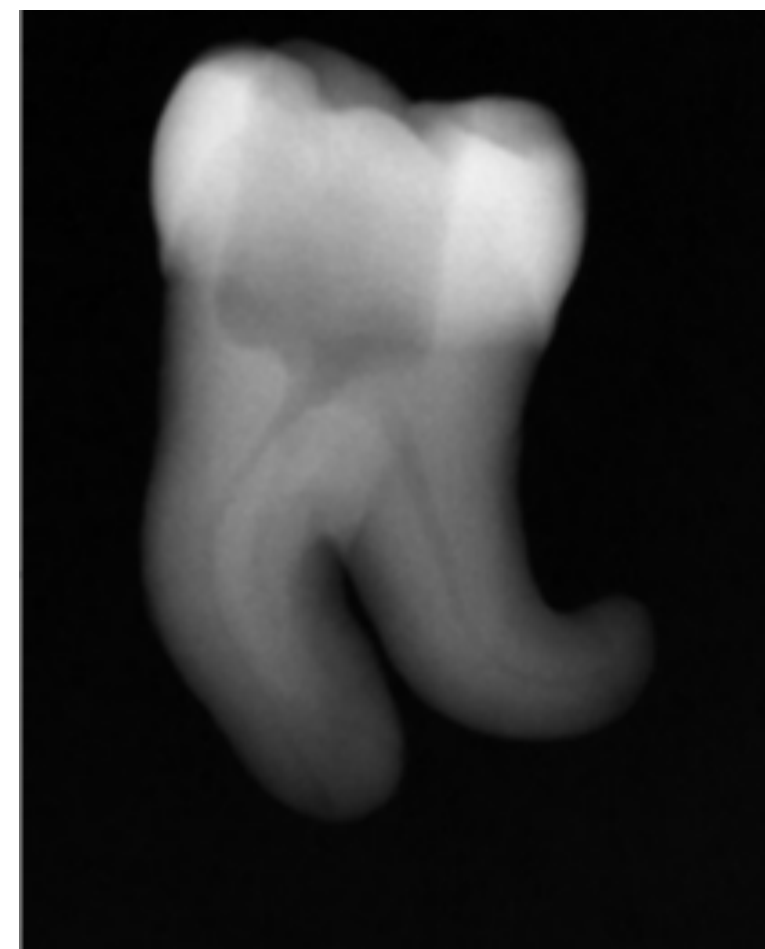
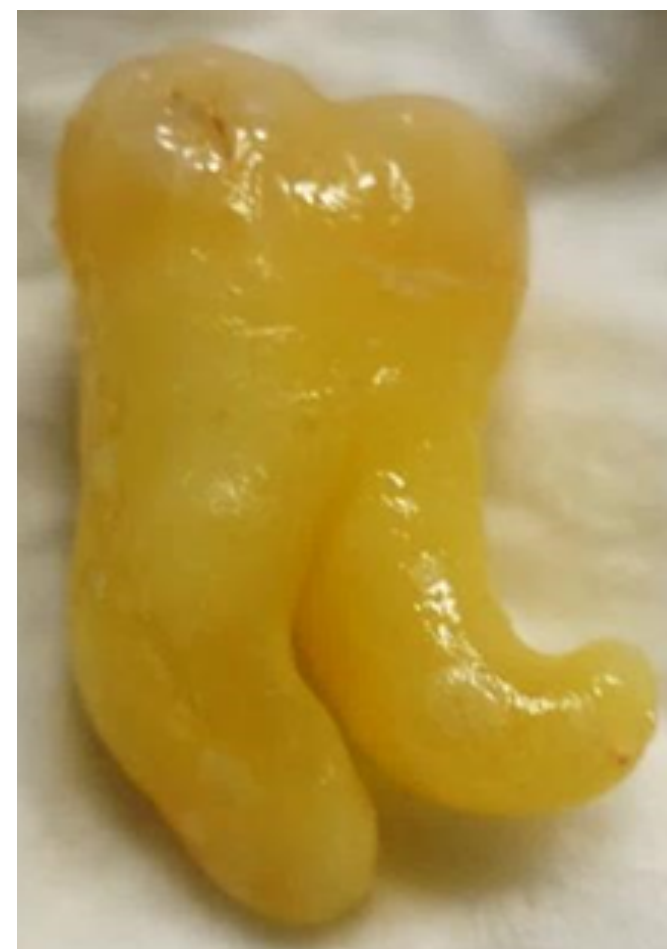


QUAL



SUA COOR?








Comprimento de 16, 25 ou 31 mm



Ponta ativa de 16 mm



R25		25/.08
R40		40/.06
R50		50/.05

Qual a diferença ?

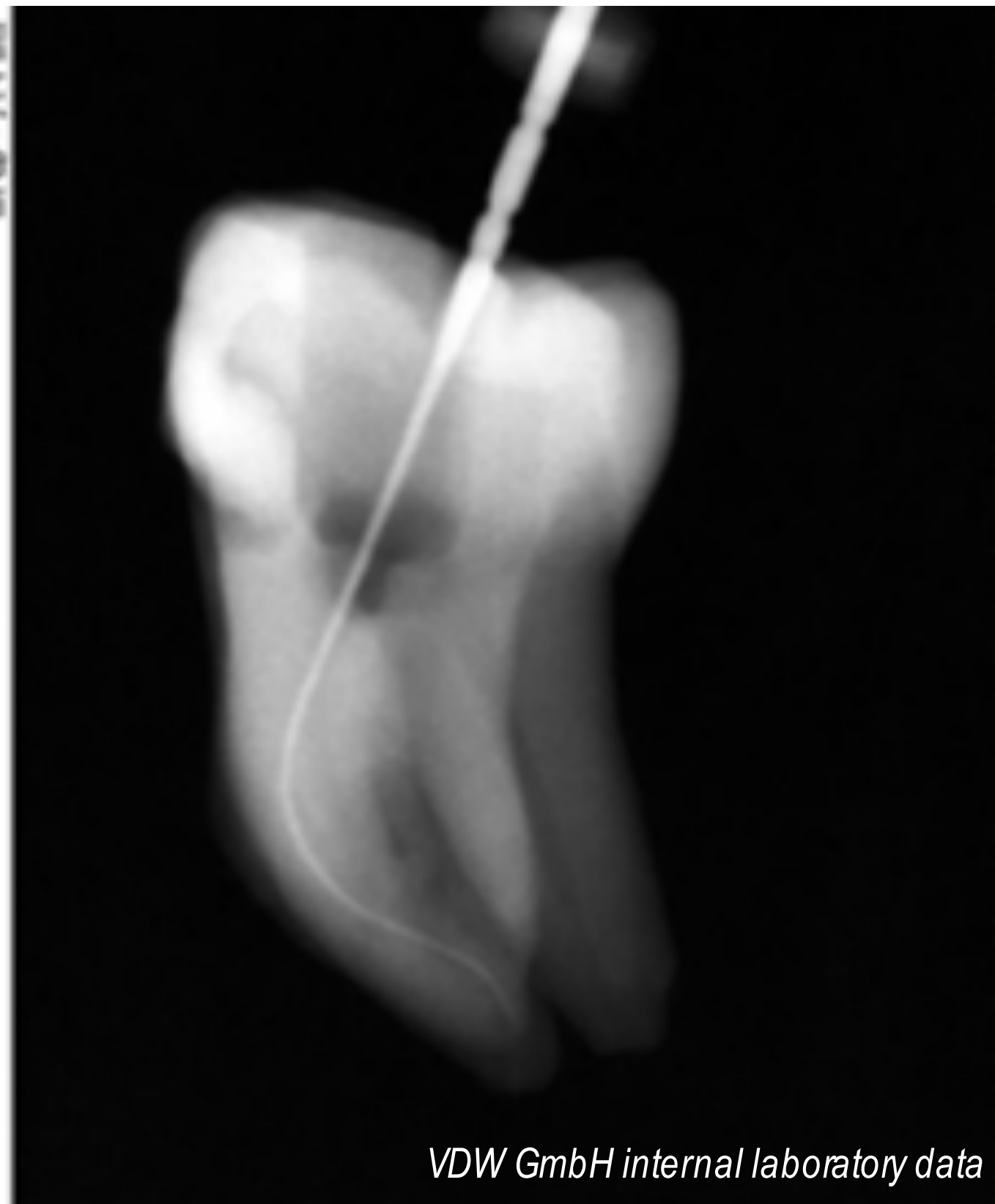
- ✓ Tratamento térmico que a deixa na cor azul
- ✓ Maior flexibilidade
- ✓ Maior segurança
- ✓ Pode ser pré-curvada (by pass / dificuldade de acessos)

RECIPROC®

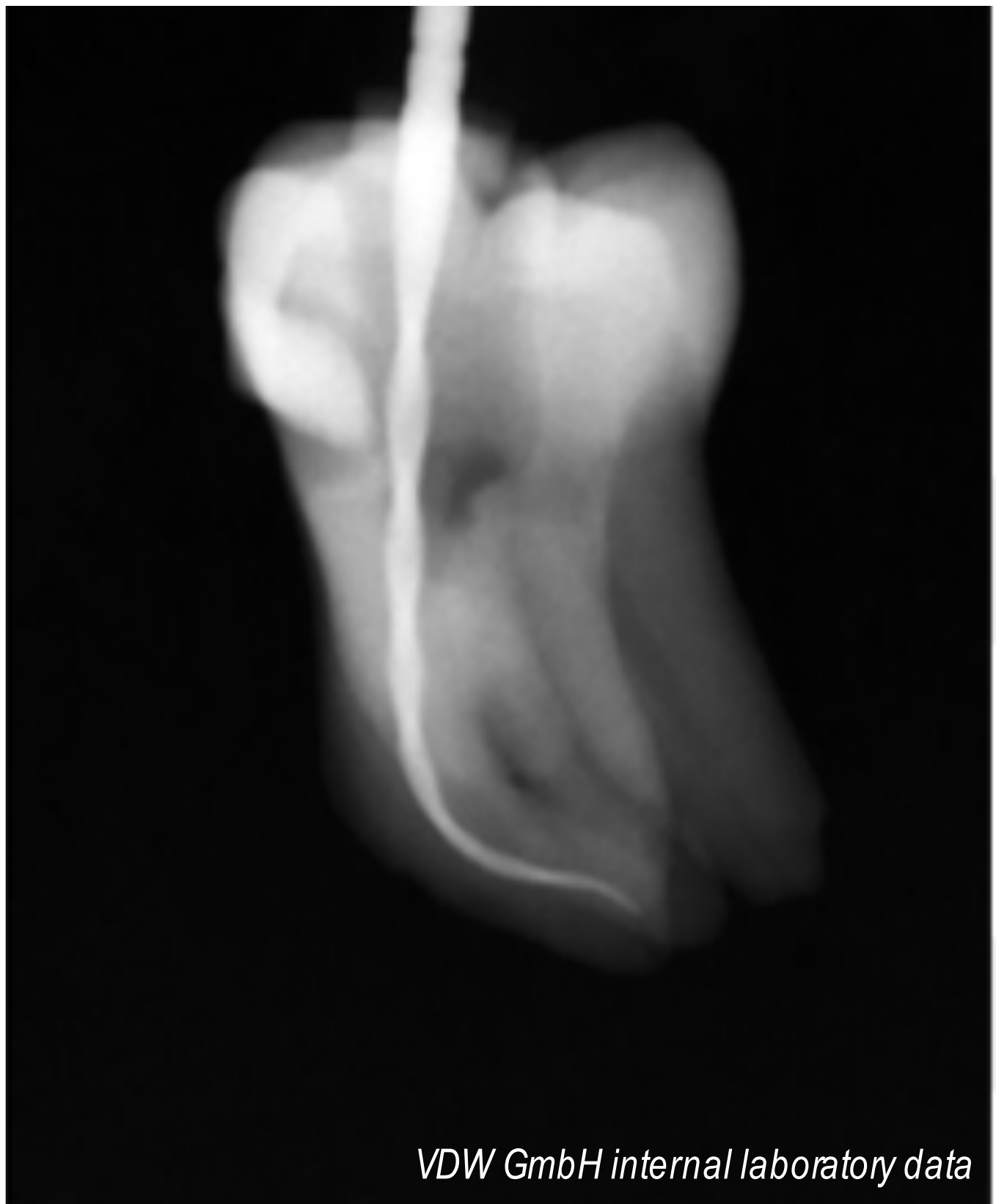


RECIPROC® blue

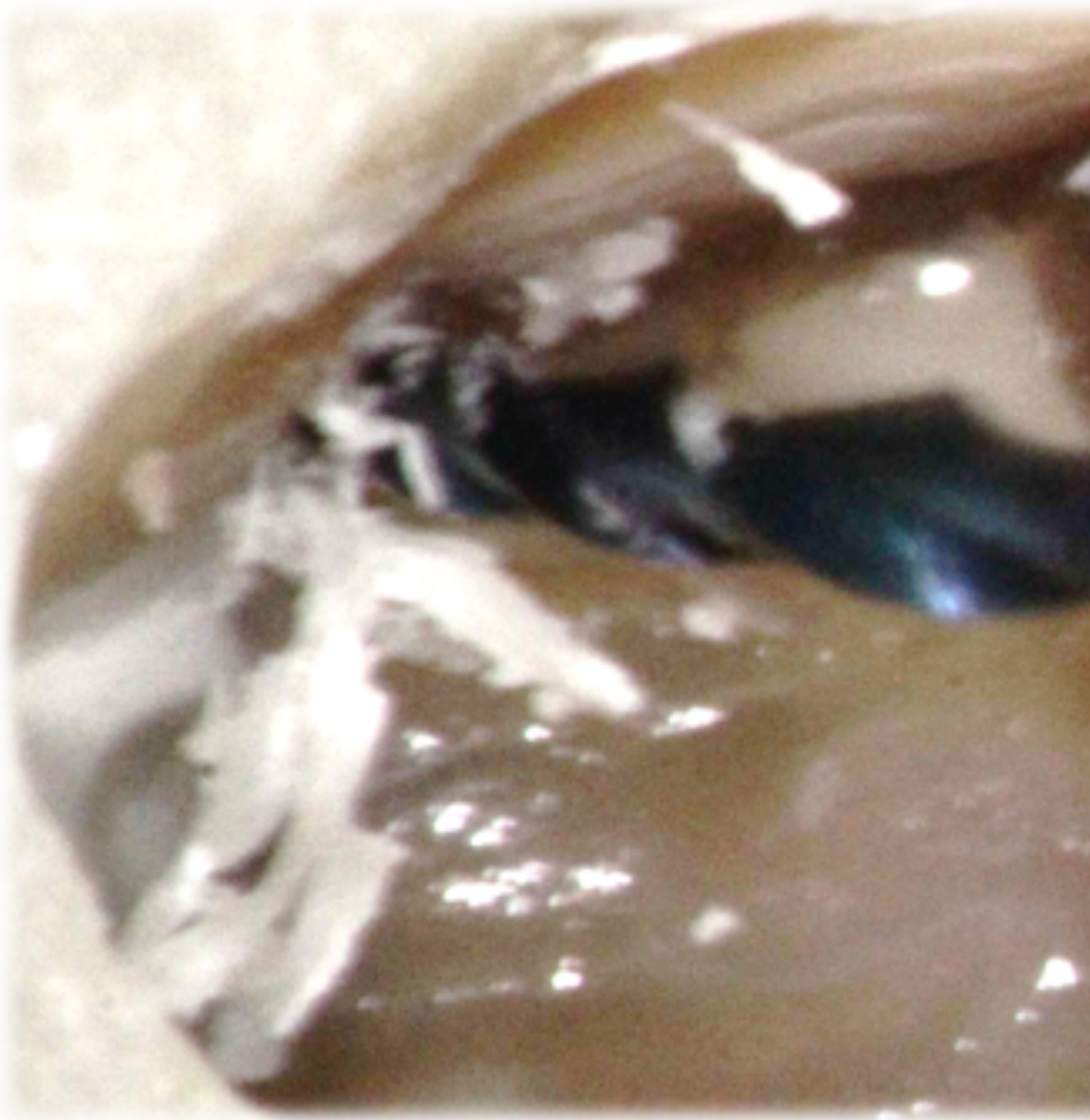




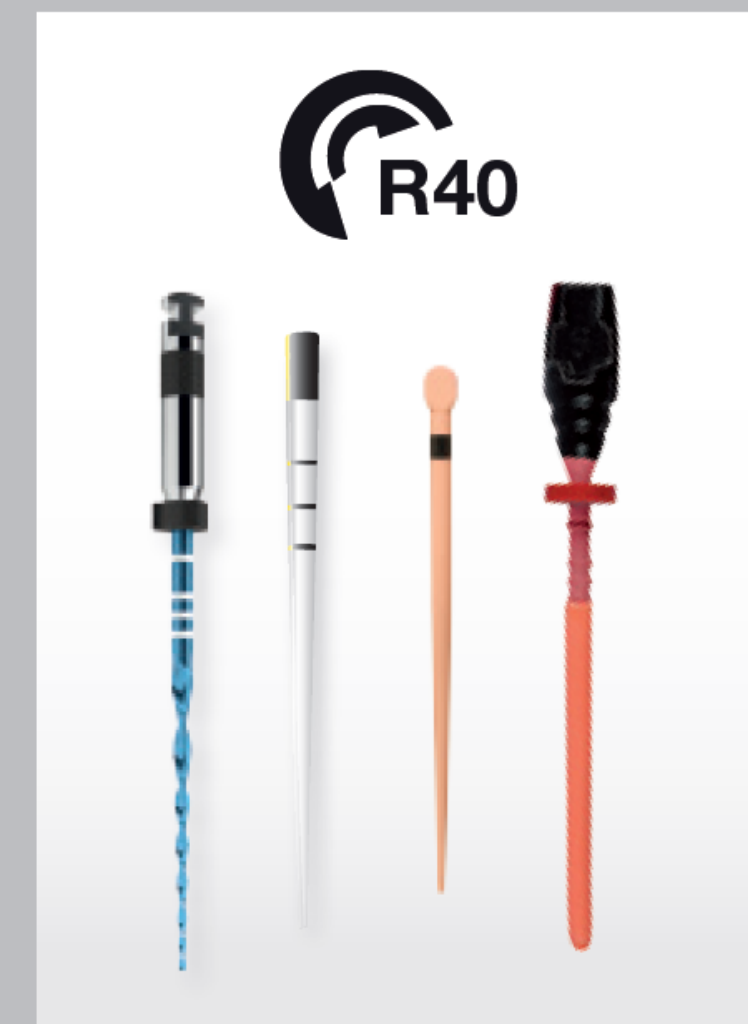
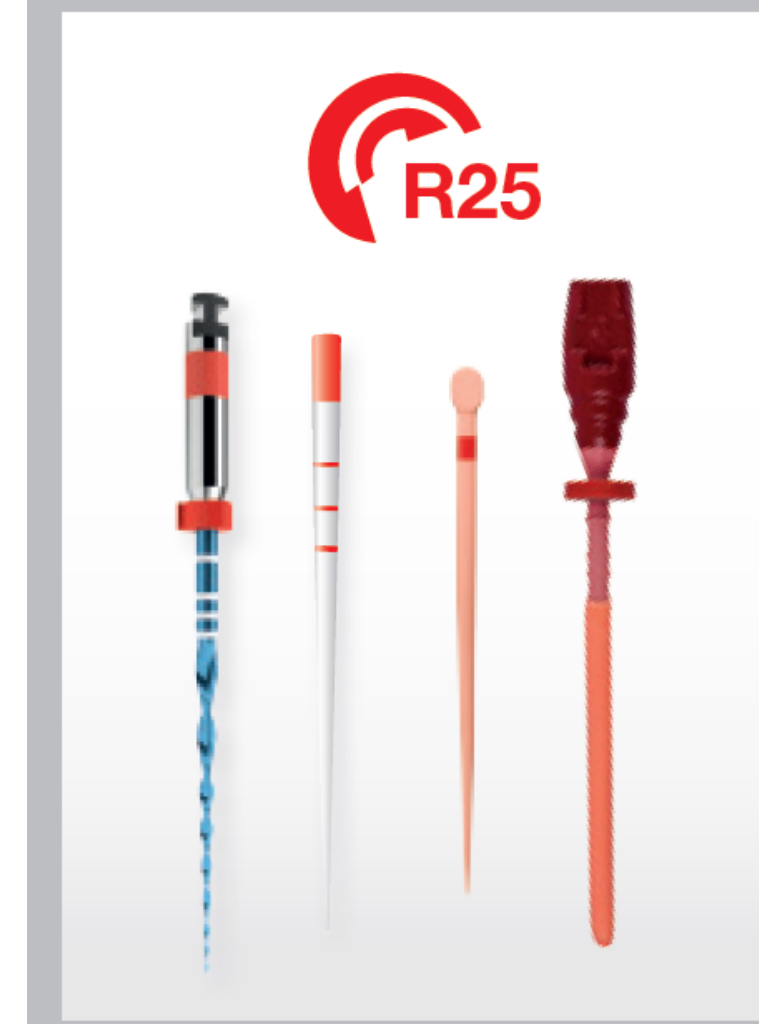
VDW GmbH internal laboratory data



VDW GmbH internal laboratory data



Obturação



RECIPROC® X RECIPROC® blue

SAME

ONE FILE ENDO

NiTi MATERIAL

S CROSS SECTION

DIFFERENT

HEAT TREATMENT = BLUE COLOR

BETTER

TACTILE FEEL

Can be pre-bent

FLEXIBILITY

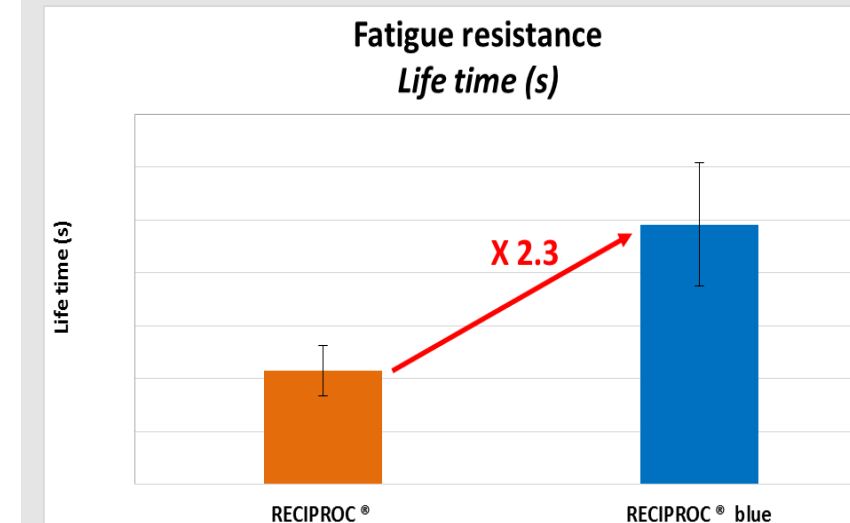
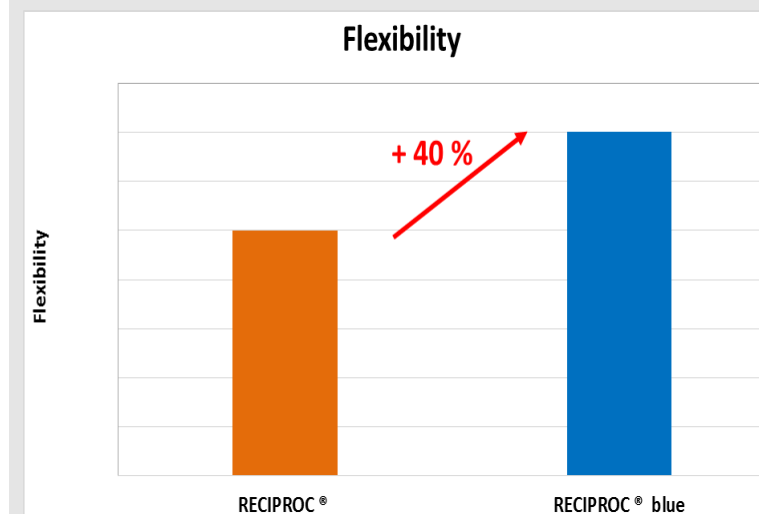
+40%
more flexible*

CYCLE FATIGUE
RESISTANCE

2.3 times
more resistant *

VISIBILITY

Short 11mm
silver colored handle



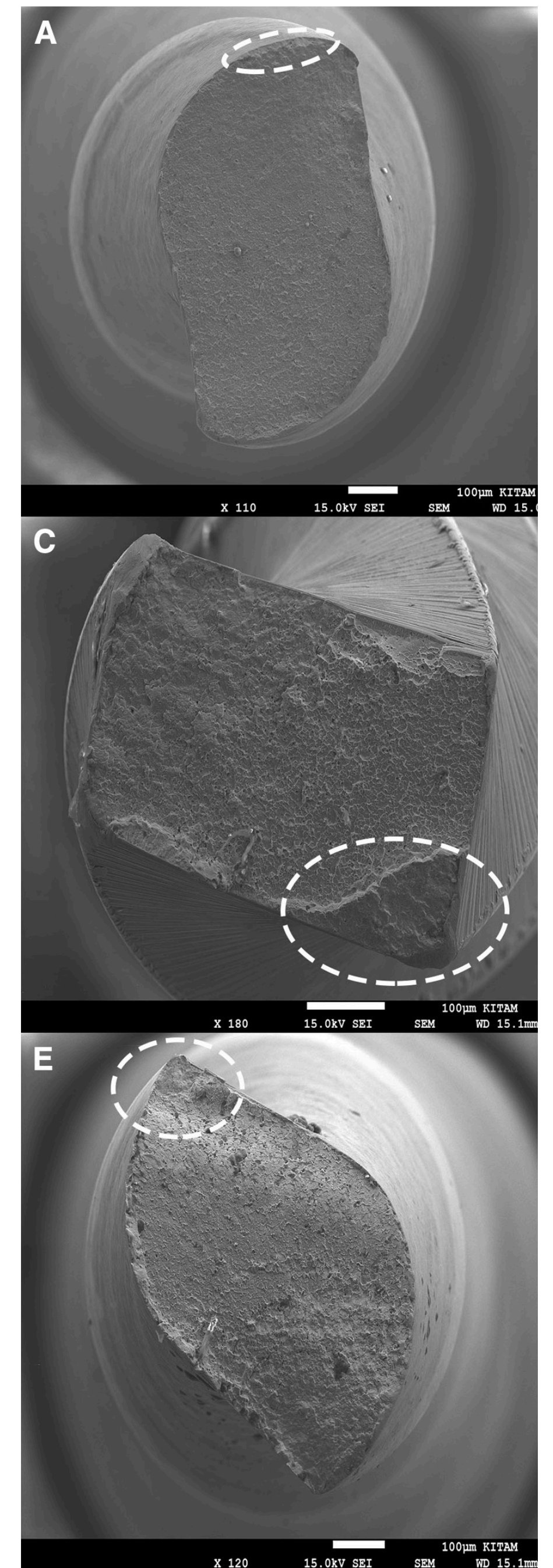
Cyclic Fatigue Resistance of Reciproc Blue, Reciproc, and WaveOne Gold Reciprocating Instruments

Cangül Keskin, DDS, PhD, Uğur Inan, DDS, PhD,* Murat Demiral, DDS,† and Ali Keleş, DDS, PhD**

J Endod. 2017 Aug;43(8):1360-1363

TABLE 1. The Mean and Standard Deviation Values for Time to Fracture (TF) (seconds) and Length of the Fractured Fragment (mm) of the Tested Instruments

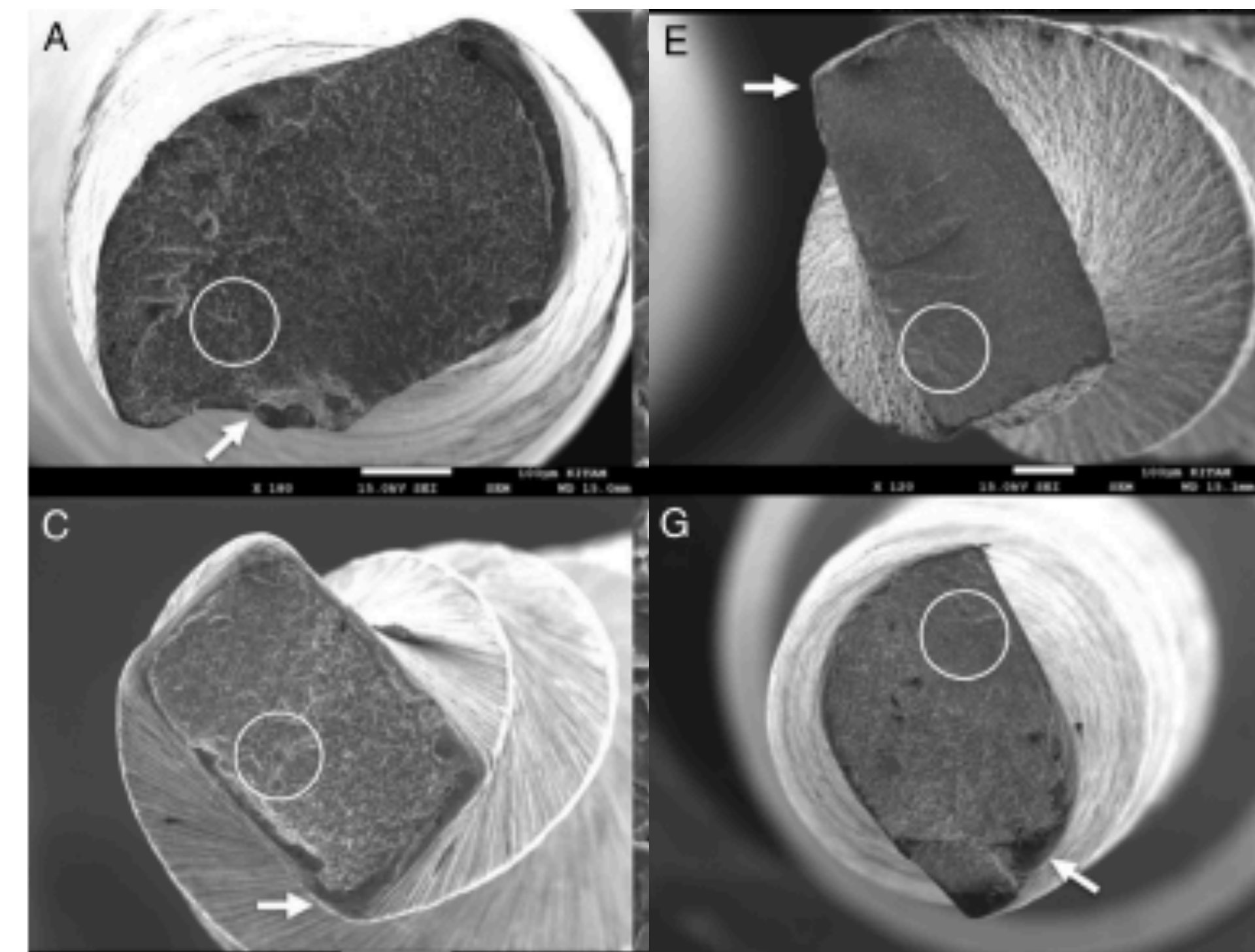
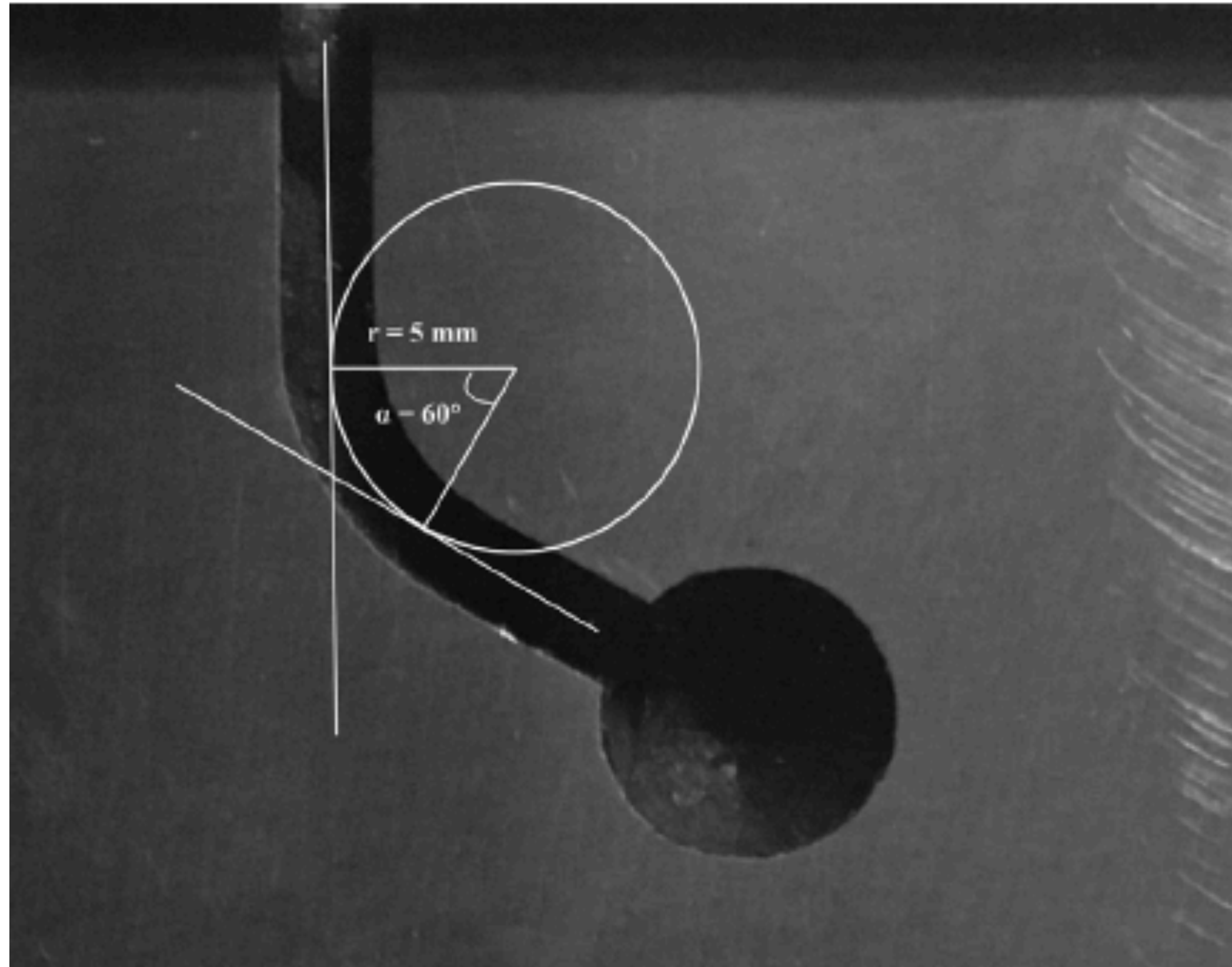
Tested instruments	TF (s) ± SD	Length of the fractured fragment (mm) ± SD
Reciproc Blue R25	872.06 ± 155.40 ^a	3.98 ± 0.34 ^a
WaveOne Gold Primary	549.54 ± 186.70 ^b	4.51 ± 0.55 ^a
Reciproc R25	343.38 ± 92.01 ^c	4.89 ± 0.81 ^a



Cyclic Fatigue Resistance of OneShape, HyFlex EDM, WaveOne Gold, and Reciproc Blue Nickel-titanium Instruments

Mustafa Gündoğar, DDS, PhD, and Taha Özyürek, DDS, PhD†*

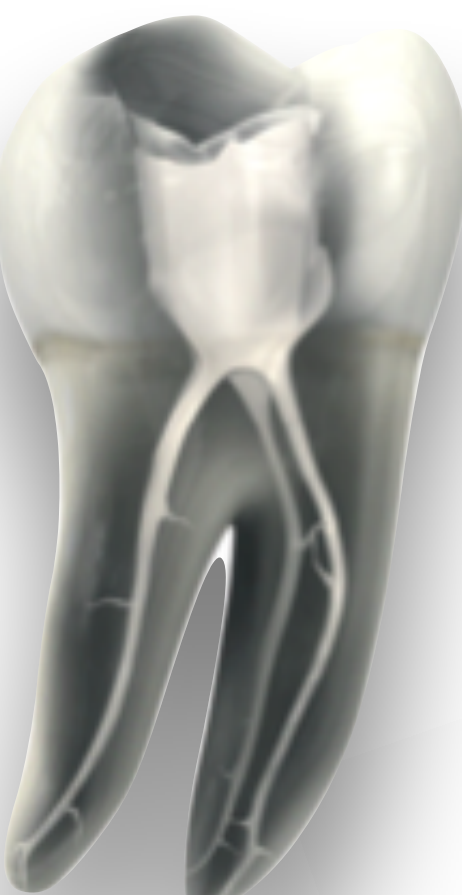
J Endod. 2017 Jul;43(7):1192-1196



	Number of cycles to failure	Fractured length (mm)
OneShape	1221.63 ± 812.4 ^a	5.73 ± 0.54
WaveOne Gold	1737.00 ± 376.32 ^b	5.76 ± 0.57
Hyflex EDM	3456.33 ± 633.37 ^c	5.77 ± 0.52
Reciproc Blue	2875.89 ± 105.35 ^d	5.72 ± 0.53
<i>P</i> value	<.05	>.5

Instrumento => Taper X Ponta X Movimento

		Ponta	Taper	Movimento
INICIO	Fazendo o caminho	< ou = 20	< ou = .04	Rotação ou Reciprocante
MEIO	Abrindo o caminho	20 < ou = 45	.04 < ou = .06	Reciprocante
FIM	Finalizando o caminho	> OU = 35	< ou = .03	Rotação



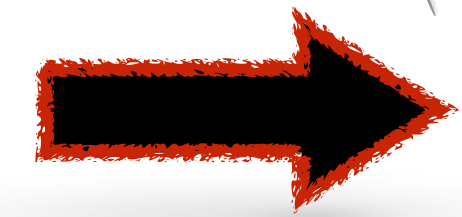
ou



R-PILOT™



Ultrassom



RECIPROC® blue



Ultrassom



Complemento apical
35/04 ou 35/02
40/04 ou 40/02

+

Ultrassom

