

Nominal	Flap Thickness [µm]			Flapdiameter [µm]		Hingesize [mm]
	Head 110 µm	Head 130 µm	Head 150 µm	Flapdiameter Ring 9,0	Flapdiameter Ring 10,0	Hingesize [mm]
Mean	115 µm	122 µm	147 µm	9,4 mm	9,85 mm	4,15 mm
Std. Deviation	10 µm	12 µm	13 µm	0,37 mm	0,29 mm	0,45 mm
No. of cuts	280	1237	719	1101	883	1984

Fig. 12 Clinical evaluation of different heads

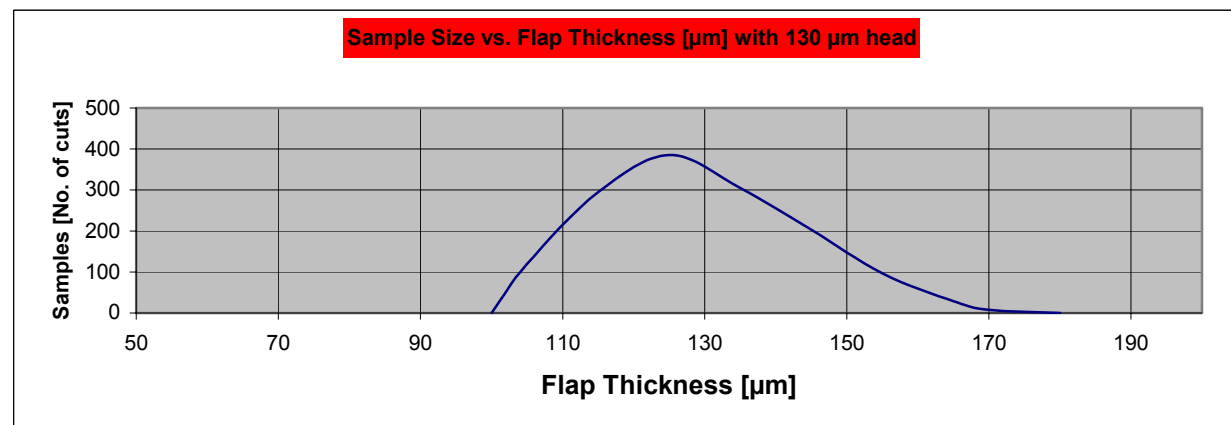


Fig. 13 Flap thickness distribution with 130 µm head and with 1237 eyes

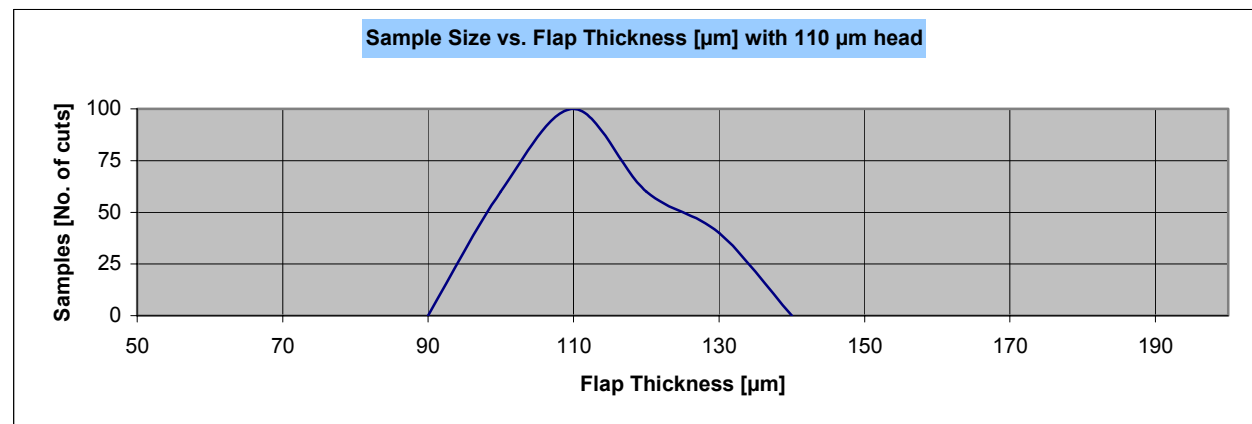


Fig. 13 Flap thickness distribution with 110 µm and with 280 eyes

Carriazo-Pendular - Flap Thickness-Study in LASIK of almost 3000 eyes

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Introduction

The revolutionary microkeratome for professional LASIK – now FDA-approved!

The Carriazo-Pendular microkeratome is based on the principle of convex applanation of the cornea during the cut.

A microkeratome cutting with precision and accuracy as predicted!

Quick Drop-and-Go System

Advantageous quick coupling of suction ring and cutting head in front of the patient's eye



Methods

- All LASIK procedures have been performed with the Carriazo-Pendular.
- All evaluated eyes were healthy and untreated
- Pre-operative corneal thickness ranging was between 480 µm – 650 µm
- Patients with a k-reading from 39 D – 48 D were treated.
- M. C. Arbelaez, MD, performed LASIK flaps with 1017 eyes by using a 130 µm head and 838 eyes by using a 150 µm head.
- R. Wiltfang, MD, performed LASIK flaps with 220 eyes by using a 130 µm head.
- Subtraction ultrasonic pachymetry was used to calculate flap thickness.



Fig. 1



Fig. 2



Fig. 3



Fig. 4

Results

- The best presentation of the predictability of the flap thickness outcome is the scattergram in Figure 8. It displays flap thickness [µm] with 130 µm vs. No. of cuts

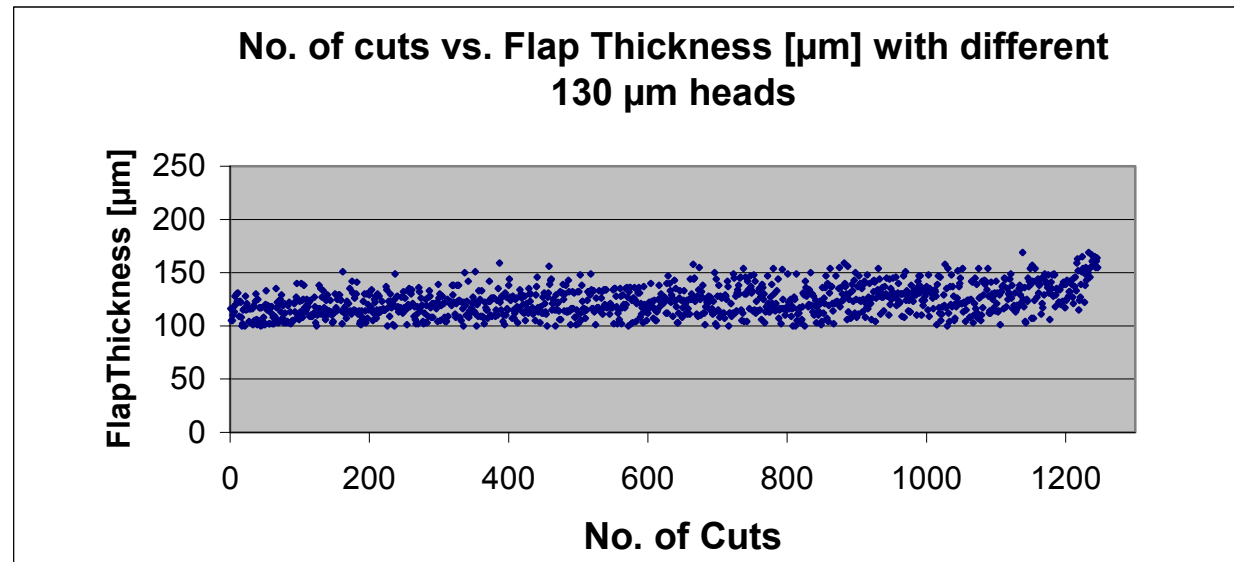


Fig. 8 Flap Thickness distribution with the 130 µm head and with 1237 eyes

The mean flapthickness was **122 µm** at a standard deviation of **12 µm** at a pre-op pachymetric thickness of the cornea between 500 µm – 580 µm.

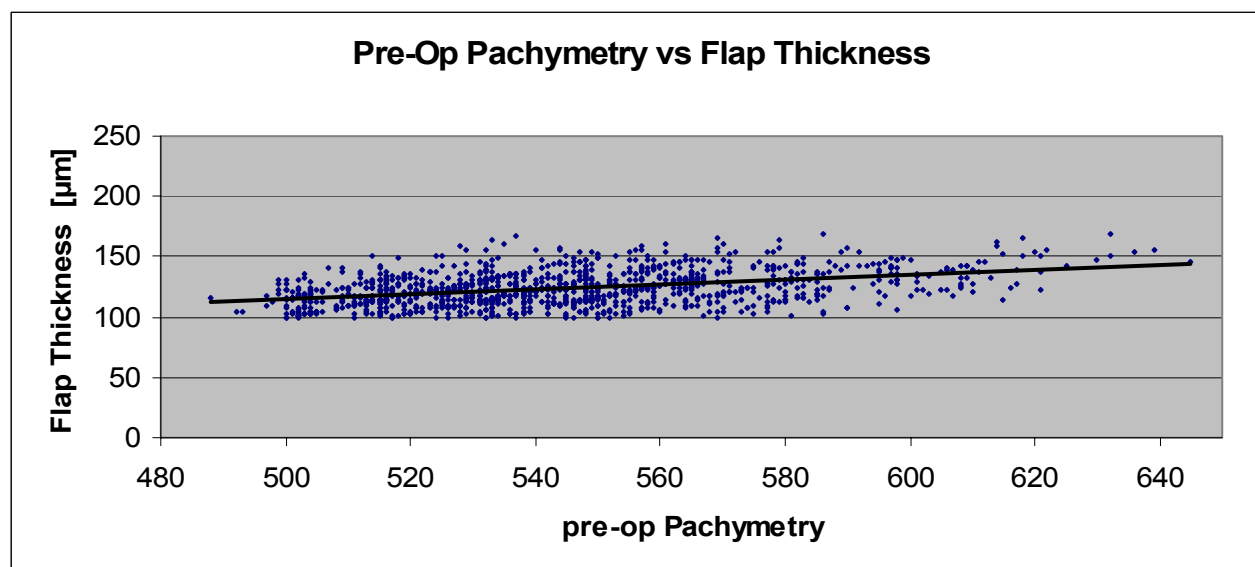


Fig. 9 Pre-Op Pachymetry vs Flap Thickness with the 130 µm head and for 1237 eyes

There is a slight dependence between pre-op pachymetry and flap thickness shown with the trendline in fig. 9. A higher corneal thickness leads to a higher flap thickness. We found that 50 µm of pre-op pachymetry changes the flap thickness by only 12 µm.

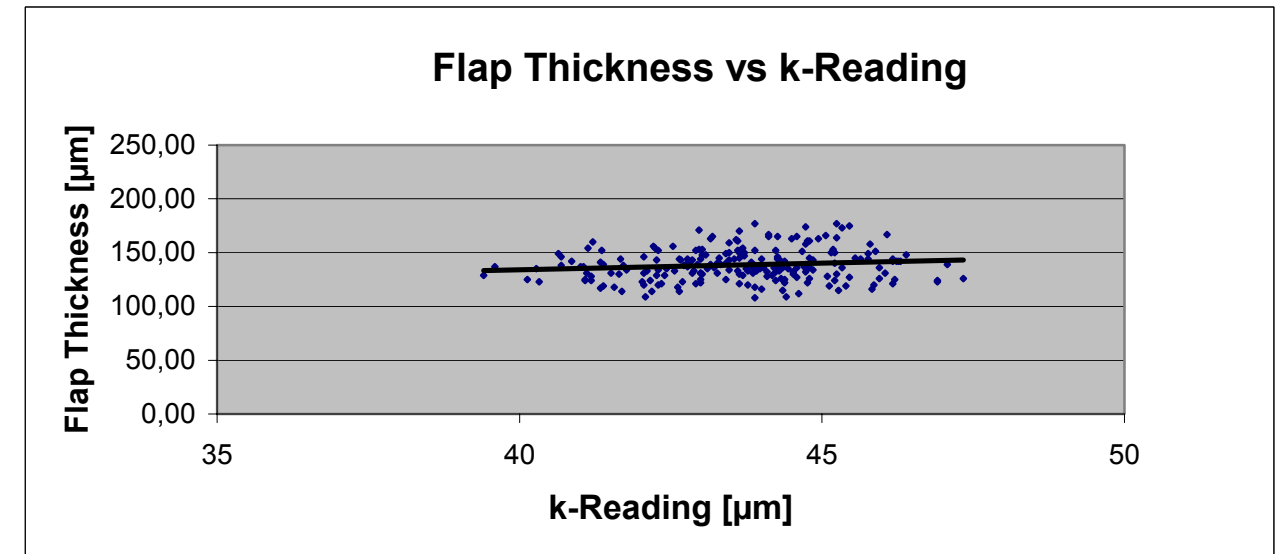


Fig.10 Flap Thickness vs k-reading with the 130 µm head and with 1237 eyes

Only a very little dependency between the flap thickness and the k-reading is shown with the trendline in fig. 10.

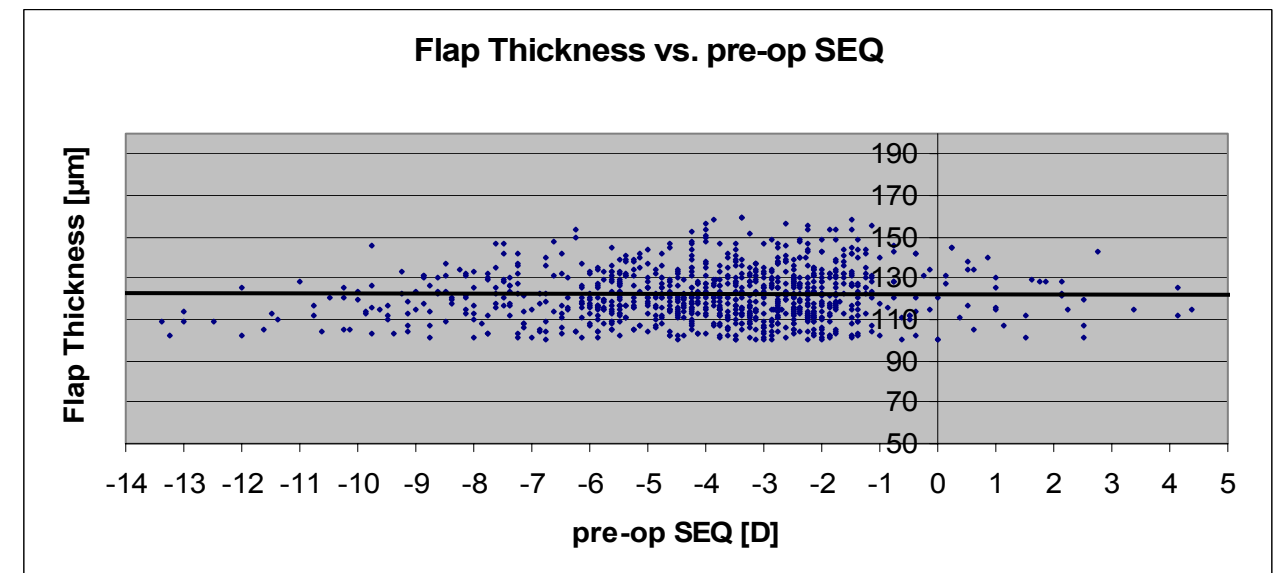


Fig.11 Flap Thickness vs pre-op SEQ (spherical equivalent SEQ = Sphere + (Cylinder/2) with the 130 µm head and with 1237 eyes

No dependency between the flap thickness and the pre-op SEQ was obvious.