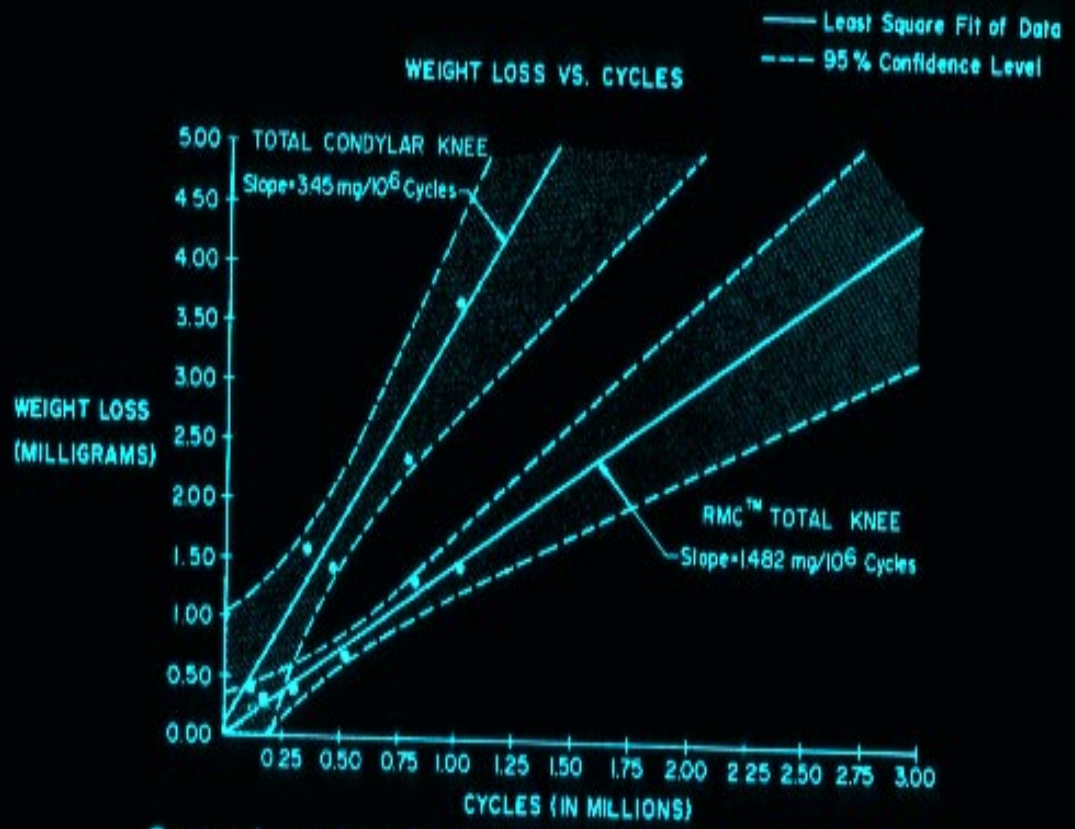


Figure 20



Comparison of the RMC and Total Condylar Wear Data

Figure 20



Comparison of the RMC and Total Condylar Wear Data

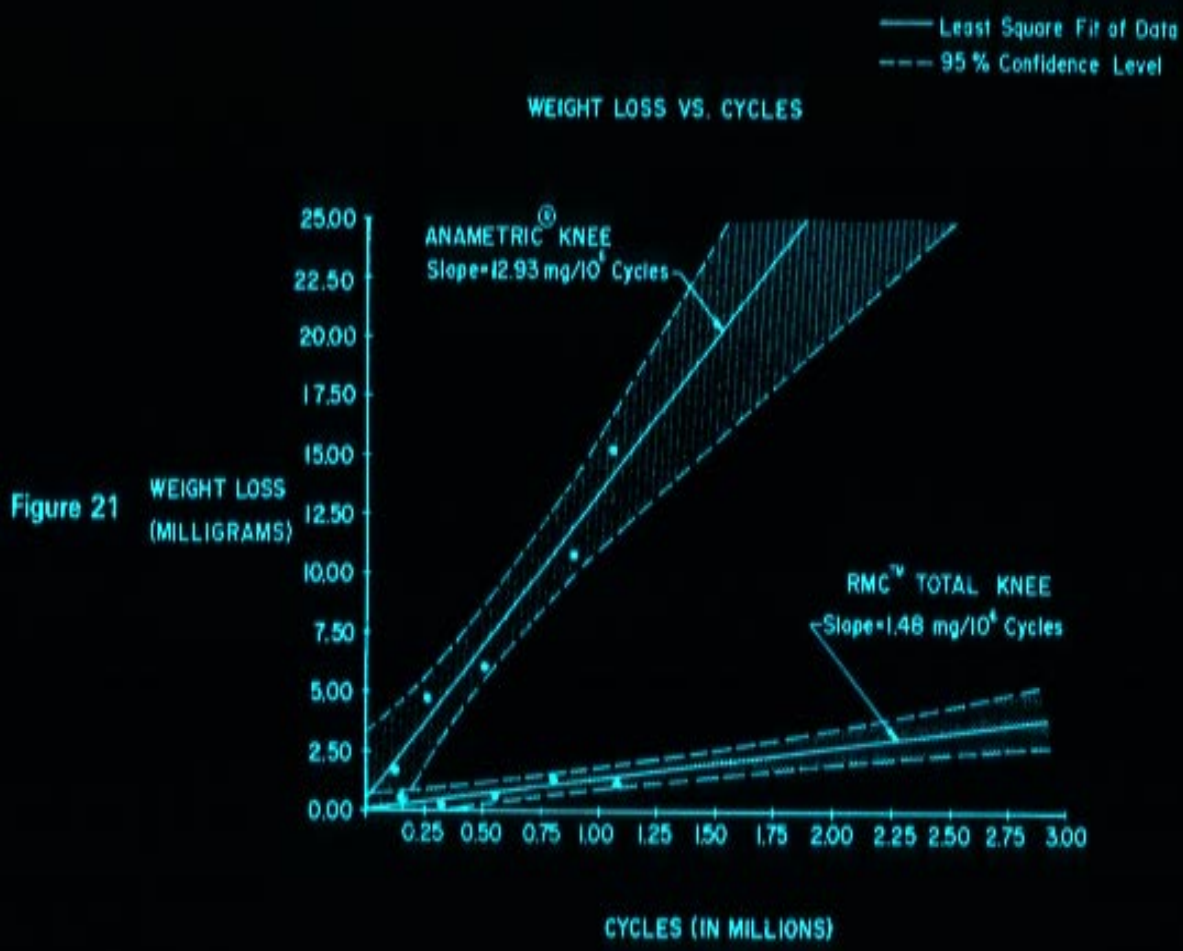
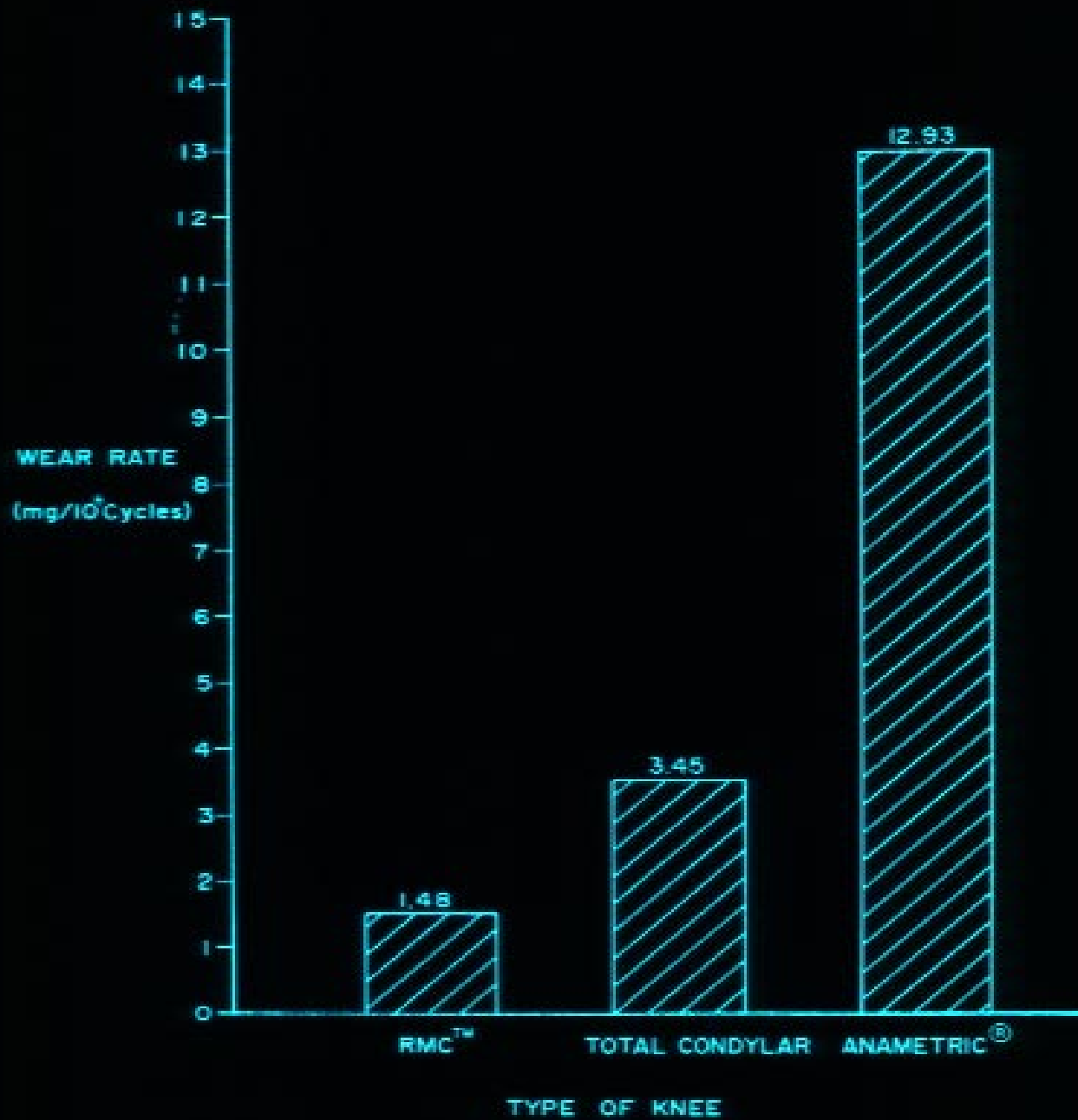


Figure 21

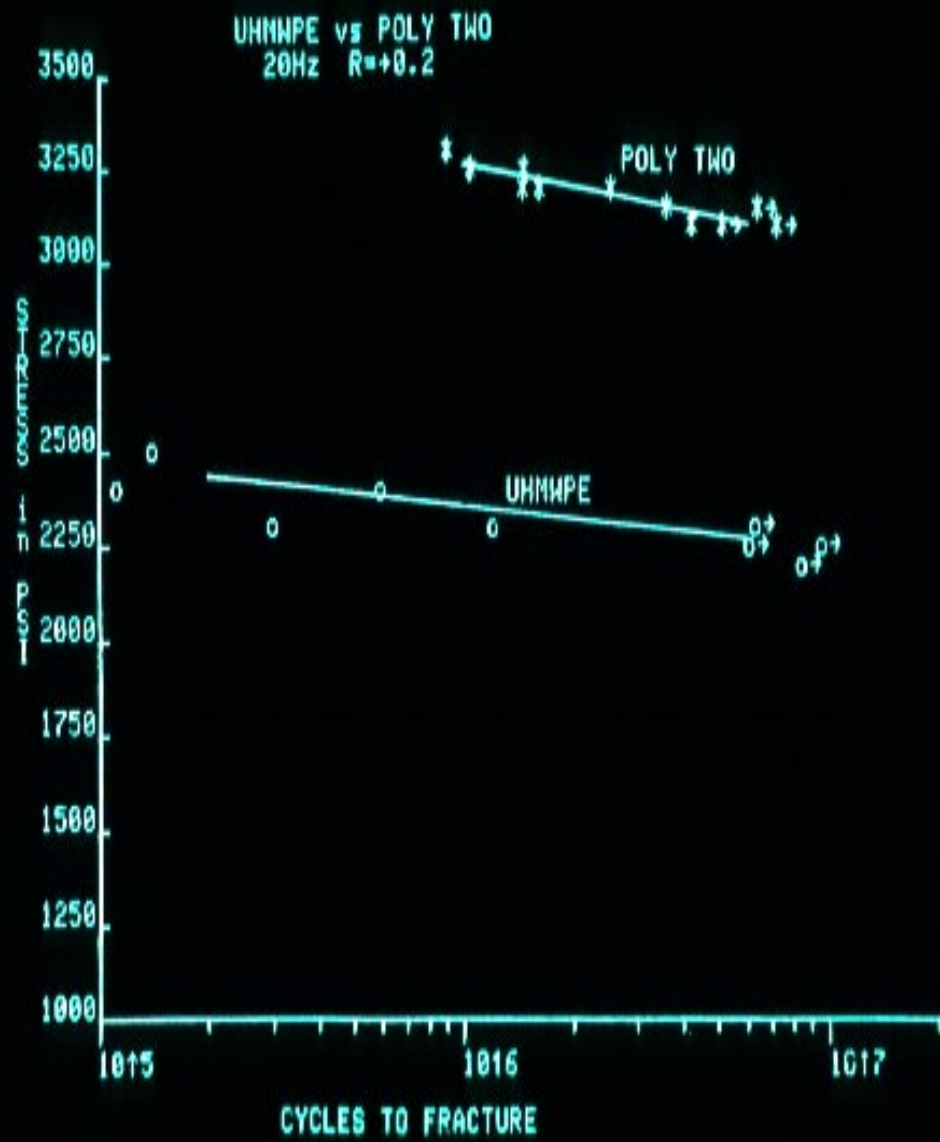
Comparison of the weight loss of the ANAMETRIC[®] and RMC[™] tibial plateaus as a function of the number of cycles in a knee simulator.

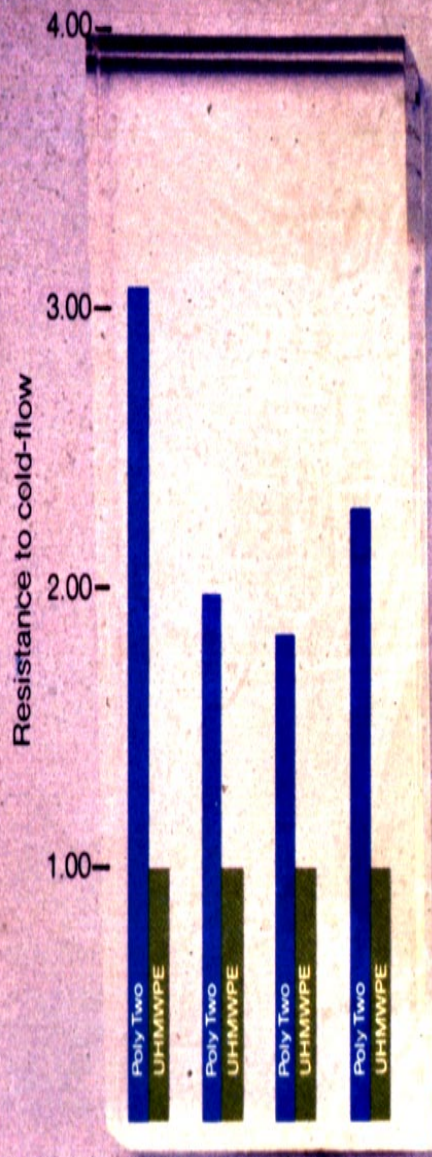


Bar Graph of the Wear Rate Results

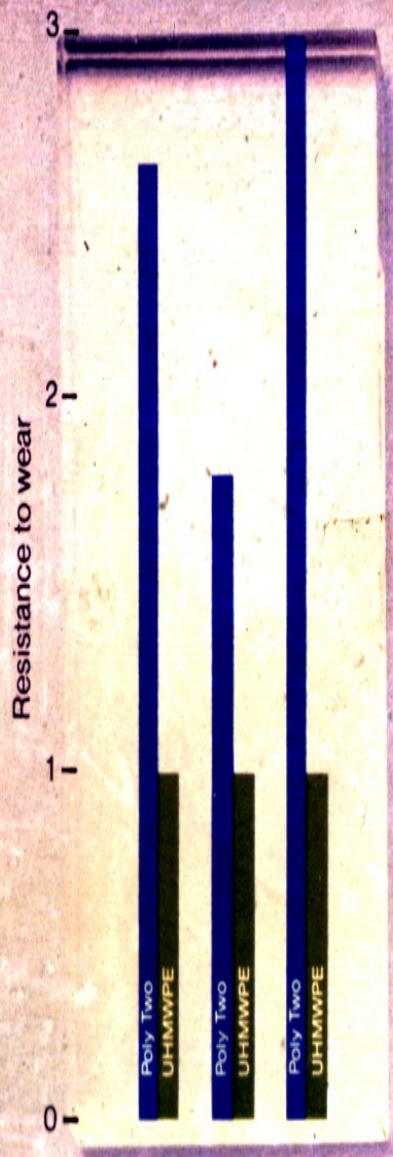
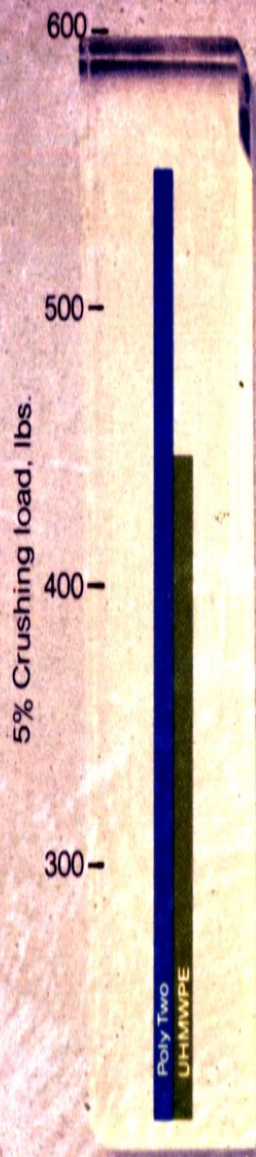








500 1000 1500 2000
STRESS LEVEL, PSI



*Hip Simulator **Ankle Simulator ***Knee Simulator

Mechanical Properties
of Polyethylene

	<u>UHMWPE</u>	<u>UHMWPE/10% Carbon</u>
Tensile Modulus (2%)	95,000 psi	139,000 psi
Yield Stress	2,870 psi	3,930 psi
Ultimate Tensile Stress	4,330 psi	3,380 psi
Ultimate Tensile Strain	390%	175%
Residual Deformation (1000psi/24hr/90min rec.)	2.0%	1.5%
Endurance Limit	2,300 psi	3,150 psi

Table 1.1 Selected Mechanical Properties of Materials Used in Total Joint Replacements

Material	Type and condition	Ultimate tensile strength MN/m ²	Tensile yield stress MN/m ²	Young's modulus GN/m ²	Elongation at fracture %	Compressive strength MN/m ²	Vickers hardness MN/m ²	Fatigue strength (10 ⁶ cycles) MN/m ²
Stainless steel	316, 316L, Annealed	520-620	250-350	200	75-86		1400-1800	245-300
Cobalt-chromium alloy	Cast	650-750	440-570	300	8		3000-4000	235-275
Titanium, pure	Annealed	550-620	480-510	100	15-20		2400	250-280
Stainless steel	316, 316L, Cold worked	1000-1500	770-1370	200	8		3200	500
Cobalt-chromium alloy	'Wrought', Cold worked	1000-1700	500-1300	230	9		4500	480
Cobalt-nickel alloy	MP 35 N Hot-forged	850-1200	650-1000	230	35-55		3000-4000	540-600
Titanium alloy	6 Al, 4V, Annealed	930	825	100	10-15		3500	400-440