

Medizinische Biophysik

25

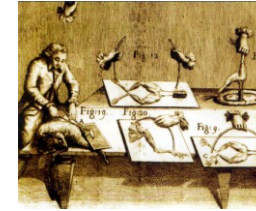
Physikalische Grundlagen der
Erregungsprozesse
Elektroreizung
HF-Wärmetherapie



1

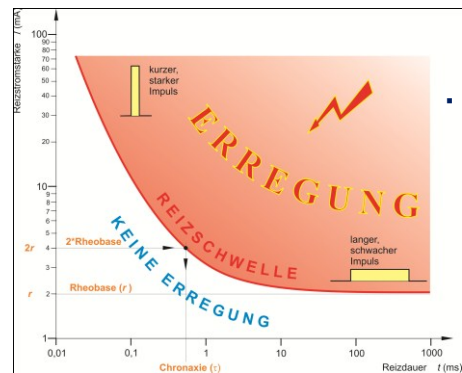
5. Anwendungen

- o Elektroreizung



2

Reizdauer-Stromstärke-Diagramm



- Die Gleichung der Kurve:



- Rheobase (r):
- Chronaxie (τ):

3

Klinisches Beispiel



Clinical Neurophysiology 117 (2006) 2069–2072

Stromstärke

Reizdauer

www.elsevier.com/locate/clnph

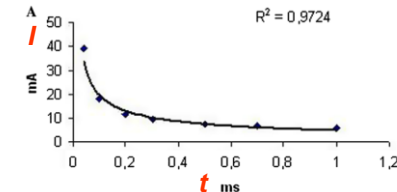
Effects of sex and age on strength–duration properties

Deniz Yerdelen ^{a,*}, Hilmi Uysal ^b, Filiz Koc ^a, Yakup Sarica ^a

^a Department of Neurology, Cukurova University Medical School, Adana, Turkey

^b Ankara Physical Medicine and Rehabilitation Education and Research Hospital of Ministry of Health, Turkey

Accepted 21 May 2006
Available online 27 July 2006



4

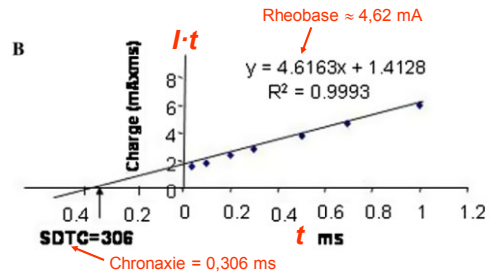
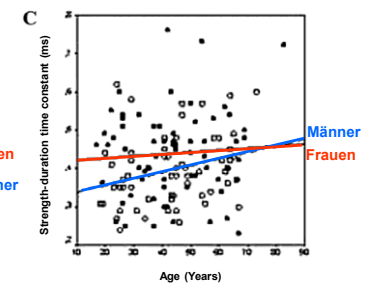
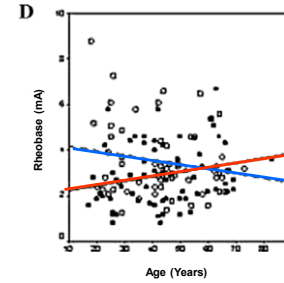


Table 1

Mean values of parameters in men and women

	Men	Women	P
SDTC	396.2 ± 90.3	438.6 ± 114.5	.023
Rheobase	3.5 ± 1.6	2.9 ± 1.4	.023
BMI	25.5 ± 2.9	25.4 ± 4.6	.939
CMAP	18.7 ± 6.8	21.4 ± 8.4	.136
SS at 0.1 ms	16.7 ± 6.2	14.9 ± 6.3	.112
SS at 1 ms	4.9 ± 1.9	4.1 ± 1.8	.028



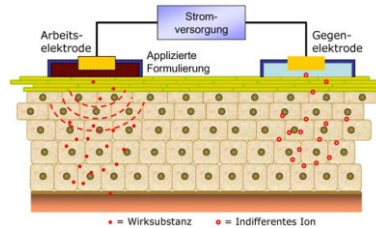
Anwendungen des elektrischen Stromes (Therapie)

Galvanisation



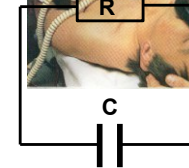
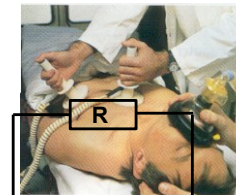
Gleichstrom, \approx mA, \approx 10 min

Iontophorese

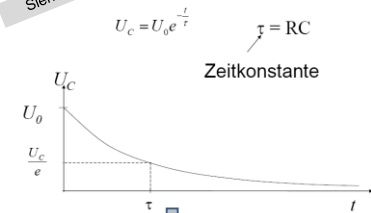


Gleichstrom, \approx mA, \approx 10 min

Defibrillator



Siehe Grundkurs!



$$I = I_0 e^{-\frac{t}{\tau}}$$

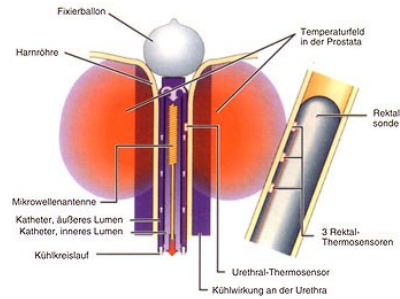
$I_0 =$

$\tau =$

- Dezimeterwellentherapie (433 MHz)

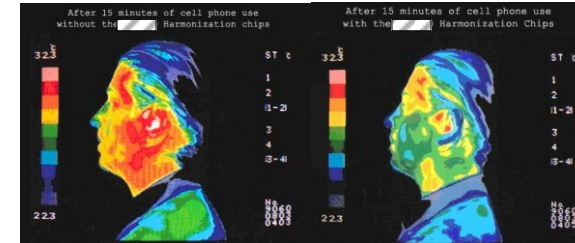
- Mikrowellentherapie (2400 MHz)

Strahlenfeldmethode



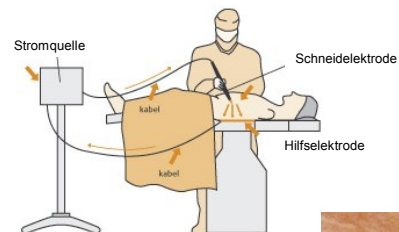
13

„Mikrowellentherapie“ durch Handys



14

- HF-Chirurgie



15

Biophysik für Mediziner: ■ IX/4

■ IX/5

Rechenaufgaben (Praktikumsbuch): 82, 88, 92, 93, 94

16