HYSTERESIS
AND MEDICAL COMPRESSION BANDAGE AND STOCKINGS

Cornu-Thenard André MD FACPH
Jollivet Pascal Medical Devices Engineer

Apology!

Burkina Faso in Africa

Elephantiasis!

2009
February
(7B.)

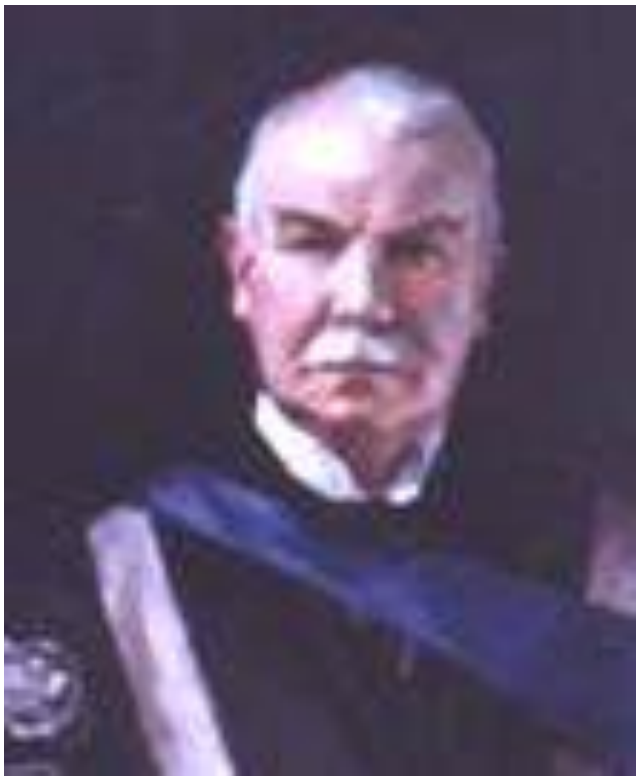
1 year later
(3S!)

Thanks Hugo

Hysteresis and Medical Compression Bandage and Stockings

Discoverer:

Sir Alfred Ewing



+/-1900
in Japan

The word "Hysteresis" comes from the Greek *husteros*, which means "lagging behind"

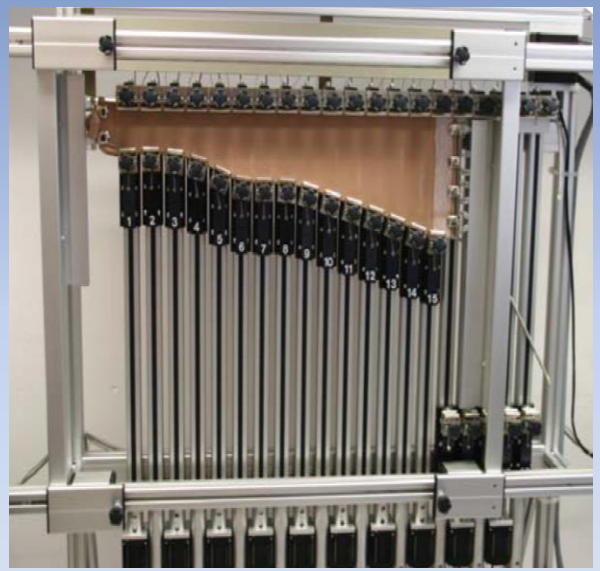
1- Hysteresis: Definition

It is the capacity of a materiel to take again its initial form after a while which depends of what it was under before

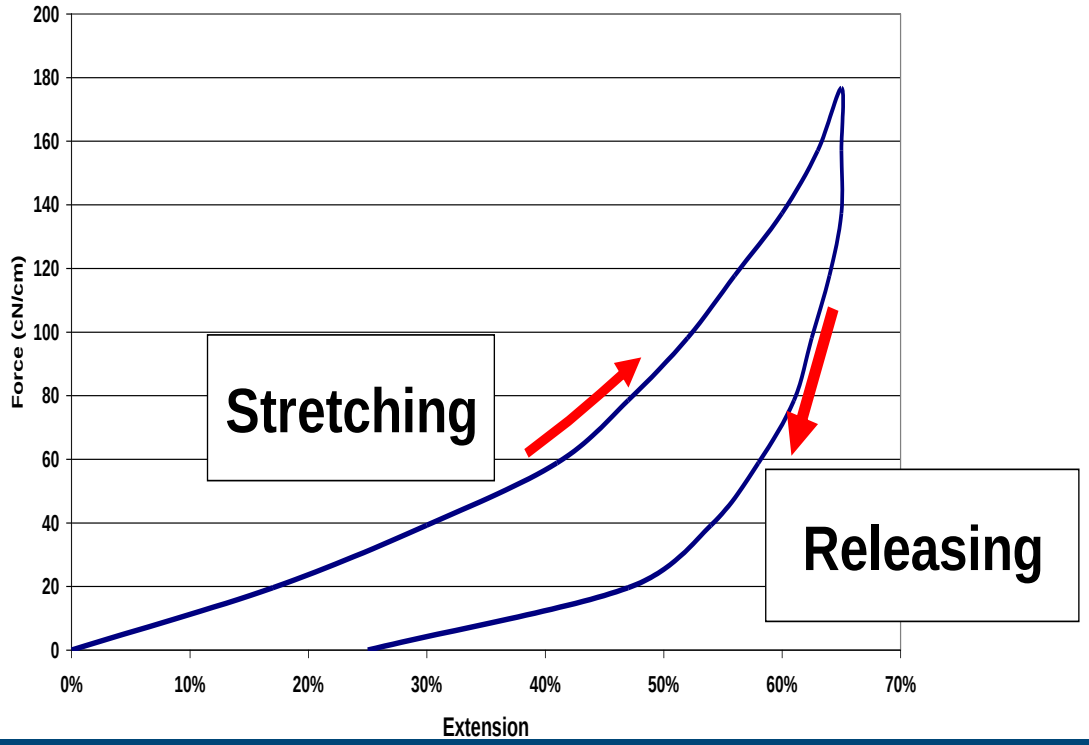
–(Hysteresis ⇨ Delay)

- Magnetism hysteresis
- Electricity hysteresis
- … and also MCS & MCB hysteresis

2- Hysteresis: Devices



"classical" Hysteresis curves of a M.C.Bandage



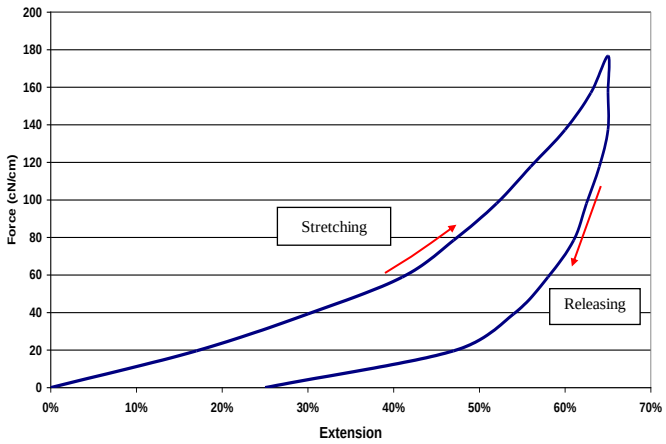
It is not so simple!

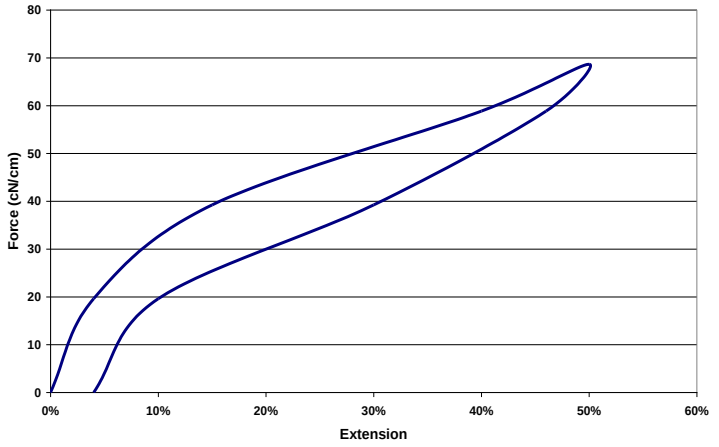
PRS 2000

3- Hysteresis: 2 "classical" curves

A short-stretch bandage produces a concave curve

A long-stretch produces a convex curve



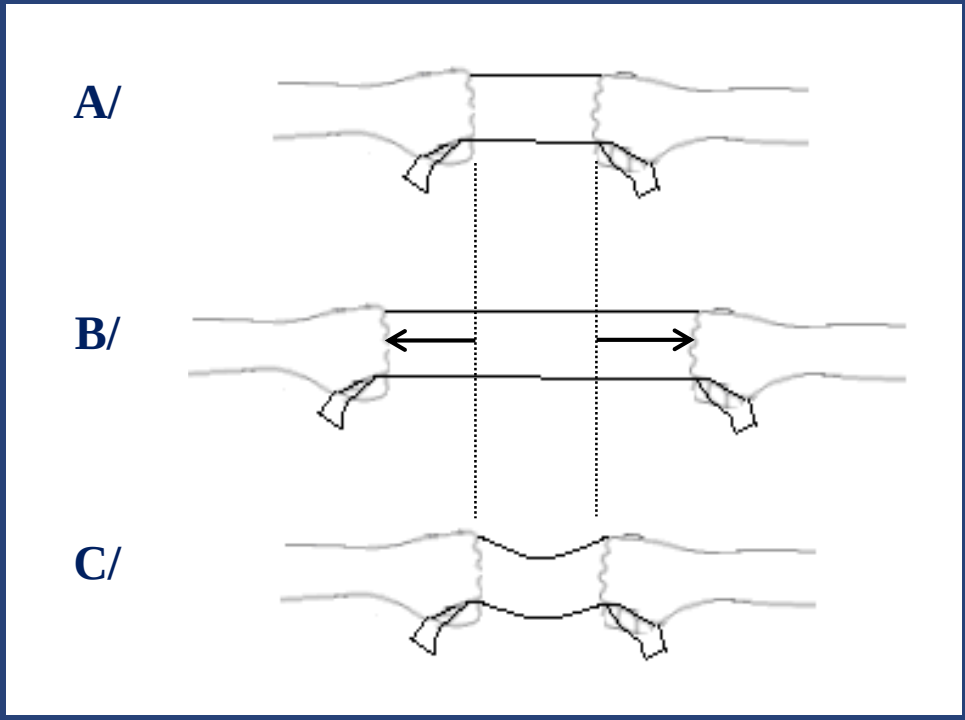


concave

convex

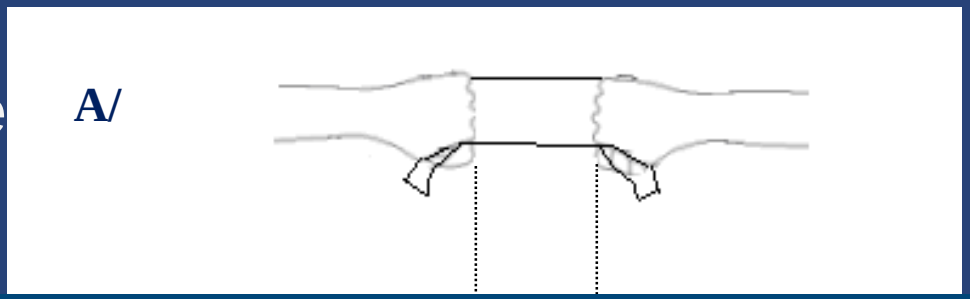
4- Hysteresis: Exemple with 1 M.C.B.

Hysteresis Phenomena with your hands



Hysteresis and Medical Compression Bandage and Stockings

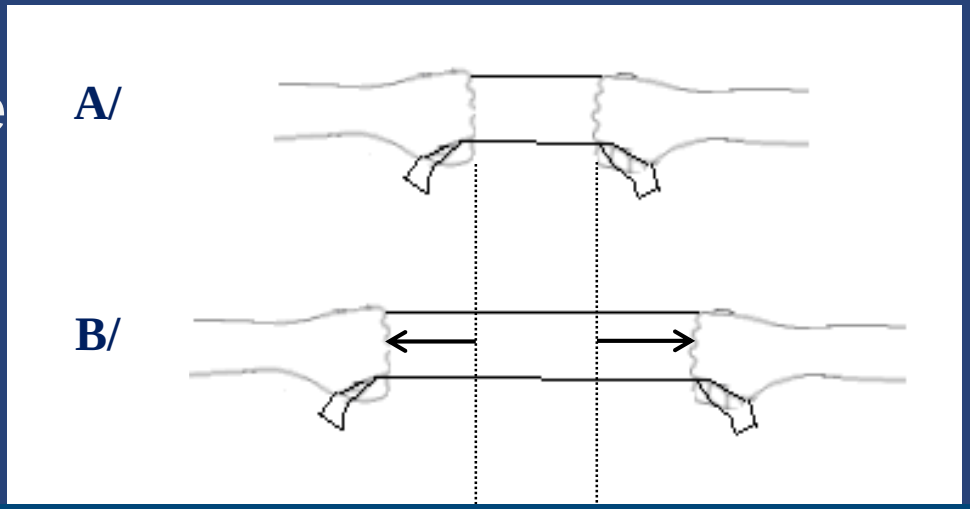
A/ Your 2 hands take the bandage by the extremities



Hysteresis and Medical Compression Bandage and Stockings

A/ Your 2 hands take the bandage by the extremities

B/ The bandage is stretched

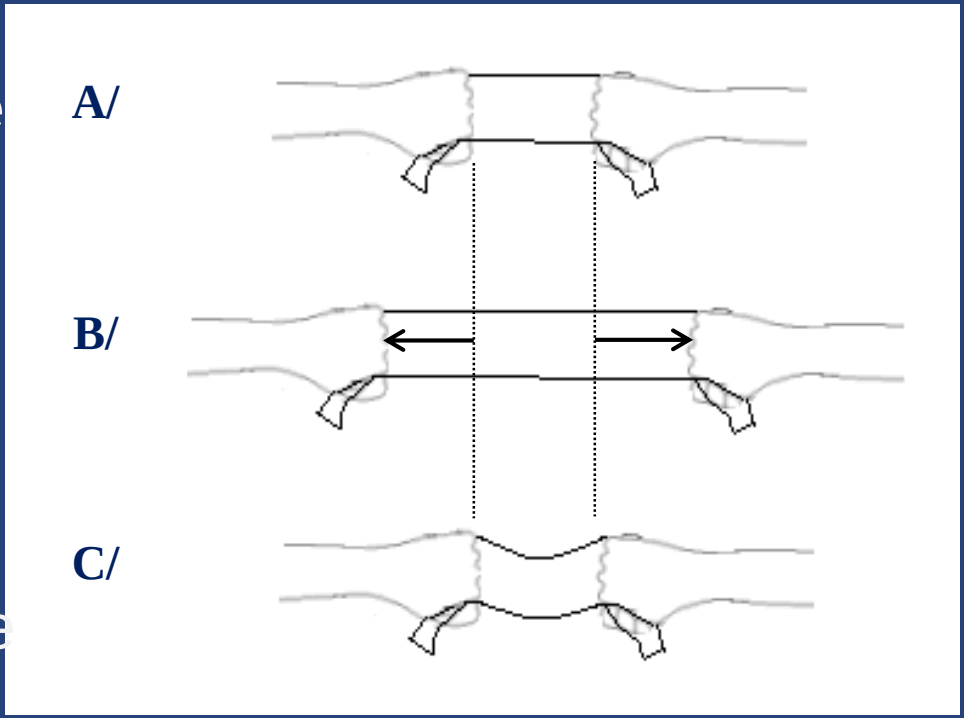


Hysteresis and Medical Compression Bandage and Stockings

A/ Your 2 hands take the bandage by the extremities

B/ The bandage is stretched

C/ You leave the bandage by it-self in order to come back to the initial elongation A/

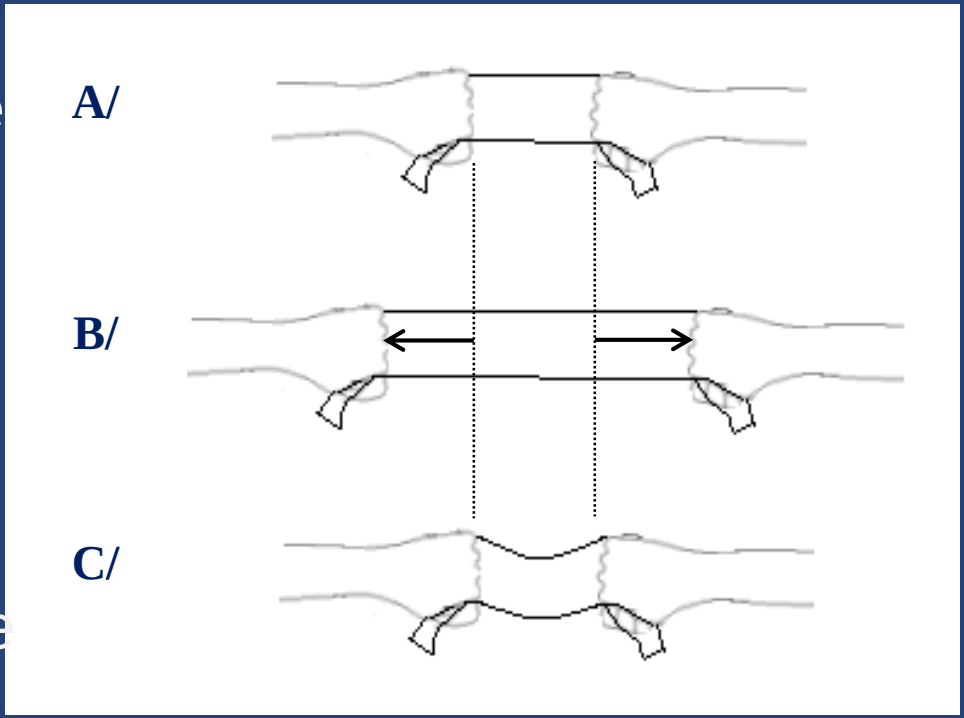


4- Hysteresis: Exemple with 1 M.C.B.

A/ Your 2 hands take the bandage by the extremities

B/ The bandage is stretched

C/ You leave the bandage by it-self in order to come back to the initial elongation A/



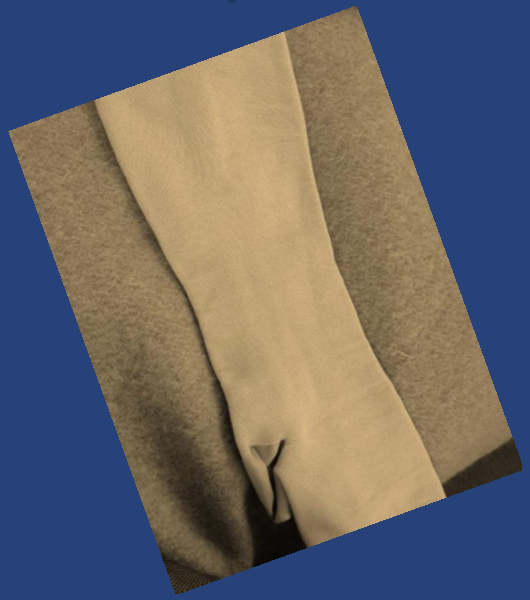
When its comes back to the initial stage A/, the bandage is longer! 10 min. later it comes back like in A/

5- Hysteresis: Exemple with 1 MCS

4 steps

1 2 3 4

Nornal postion



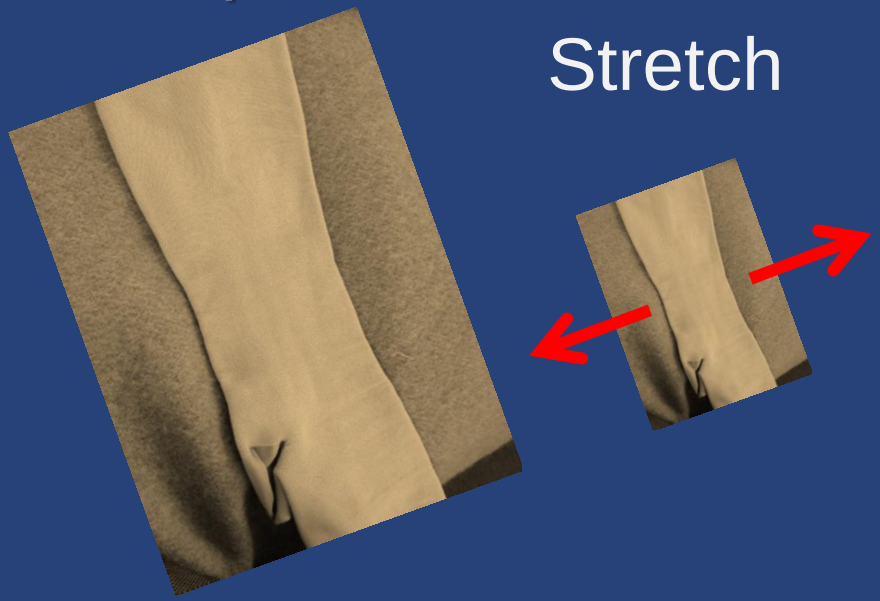
Hysteresis and Medical Compression Bandage and Stockings

4 steps

1 2 3 4

Nornal postion

Stretch

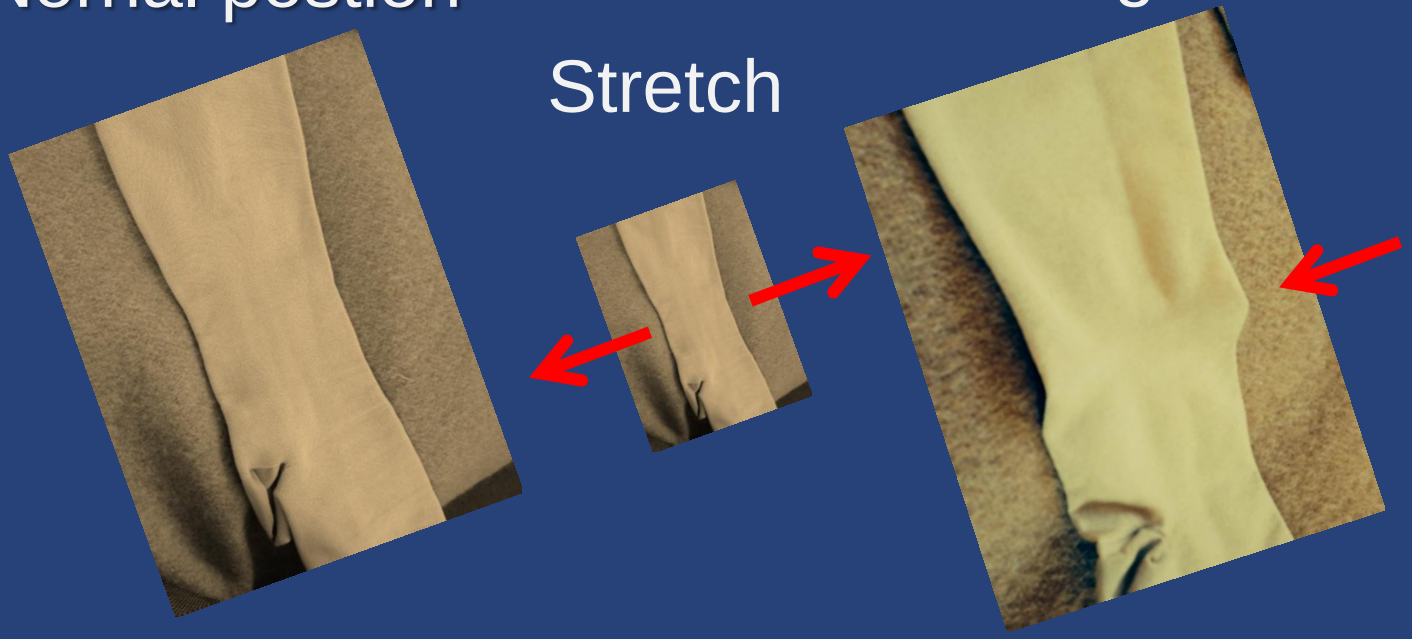


Hysteresis and Medical Compression Bandage and Stockings

4 steps

1 2 3 4

Nornal postion Stretch Realizing & after 10 min.



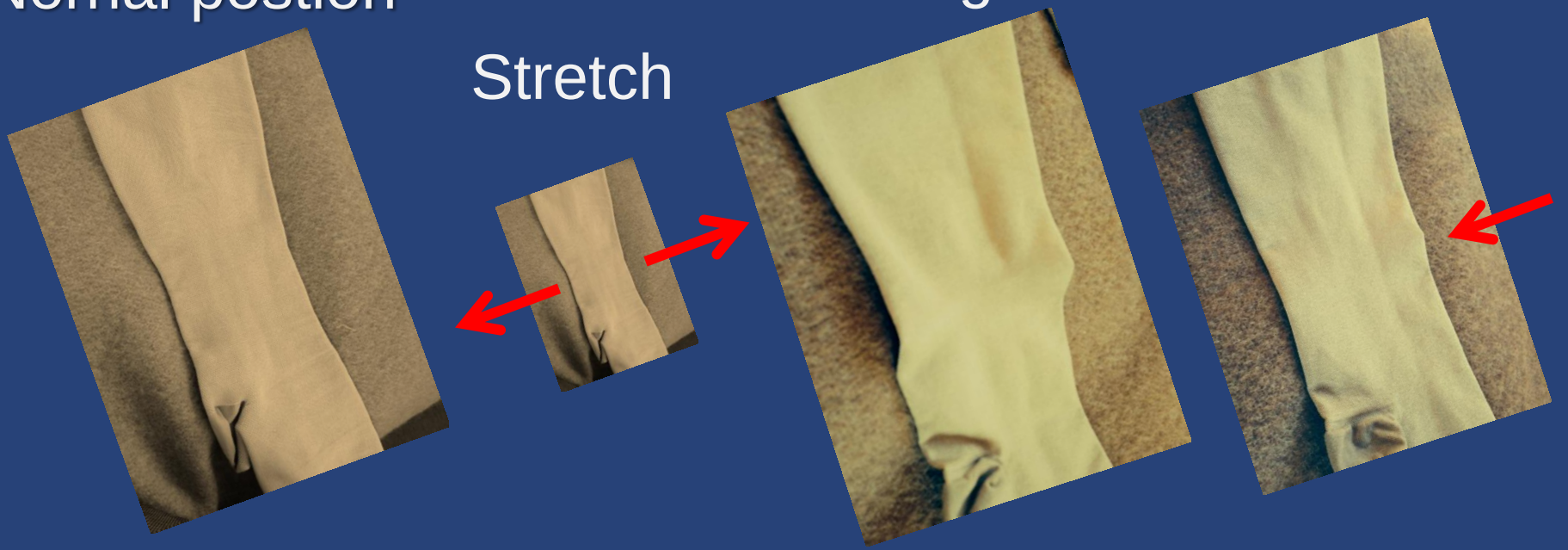
Hysteresis and Medical Compression Bandage and Stockings

4 steps

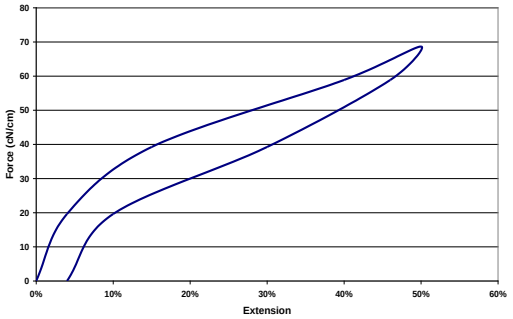
1 Nornal postion

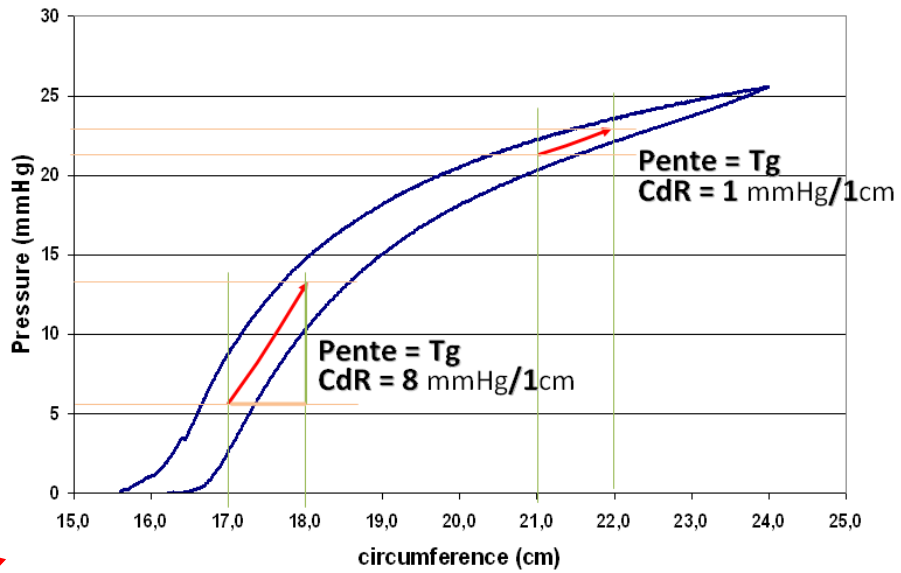
2 Stretch

3 Realizing & 4 after 10 min.

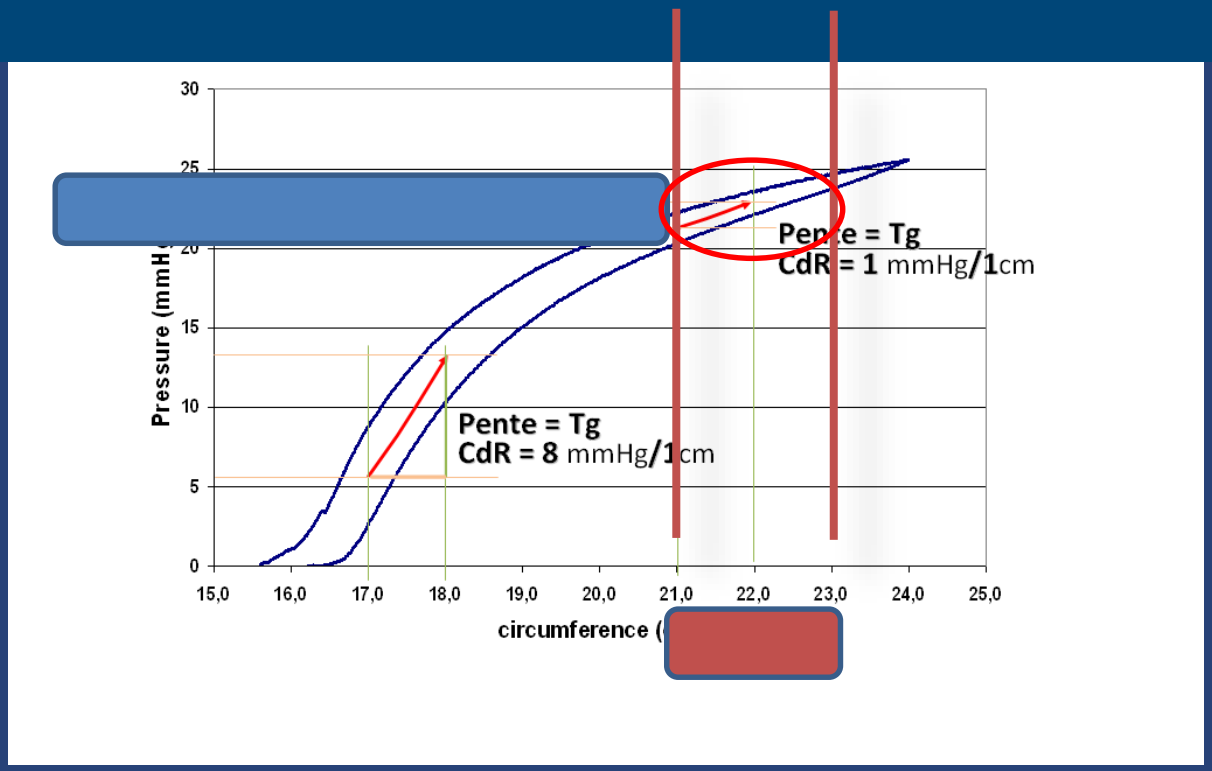


6- Hysteresis: Curves Exemple with 1 MCS

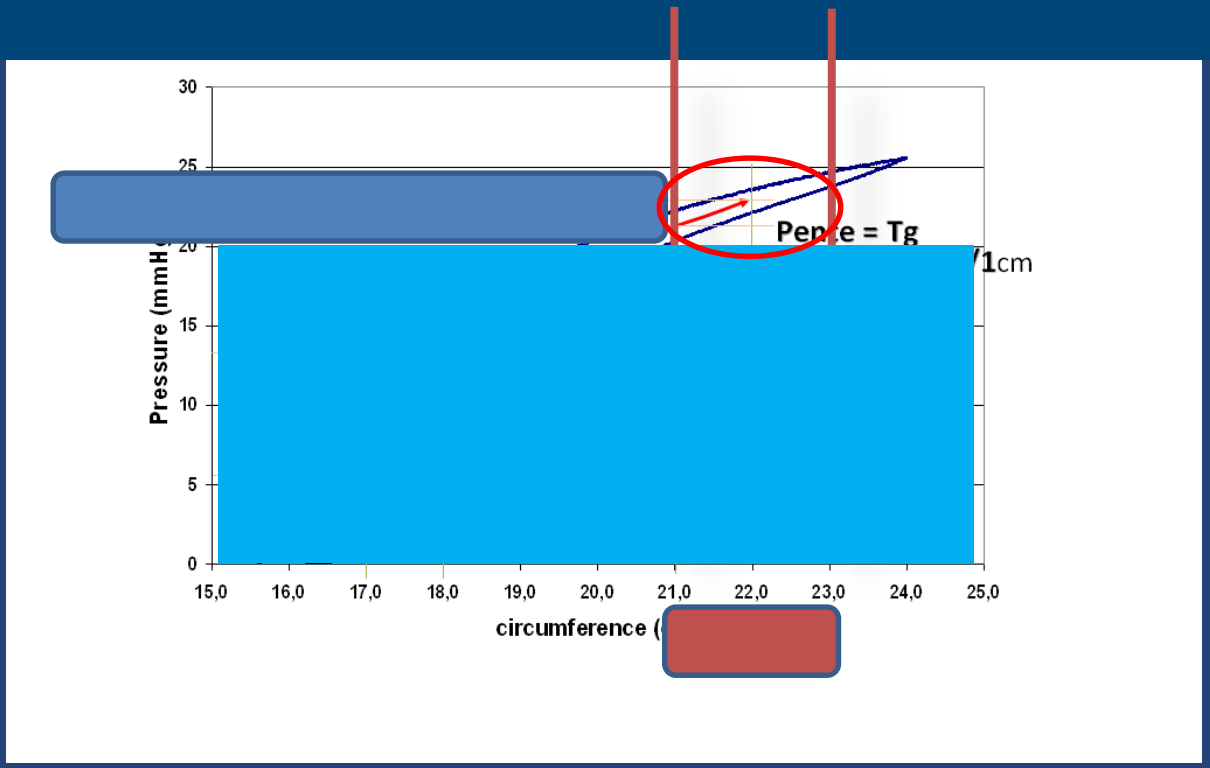




6- Hysteresis: MCS



6- Hysteresis: MCS



Conclusions (1)

It is not really easy to understand

1- For MCB

More precise studies should be performed taking into account the number of turns applied.

However theses results support previous studies

Conclusions (2)

2- For MCS,

Hysteresis curves give the relationship between the size of MCS (or patient ankle perimeter in cm) and pressure delivered,

So we have the correct "dosage" for a given situation.

So we understand why manufactures give sizes from 3 to 3 cm or less.

Hysteresis and Medical Compression Bandage and Stockings

Apology (bis)!

Morocco (in Africa) tomorrow!

Elephantiasis!

2015
SEPTEMBER

?

1 year later

Again Thanks
Hugo

References

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