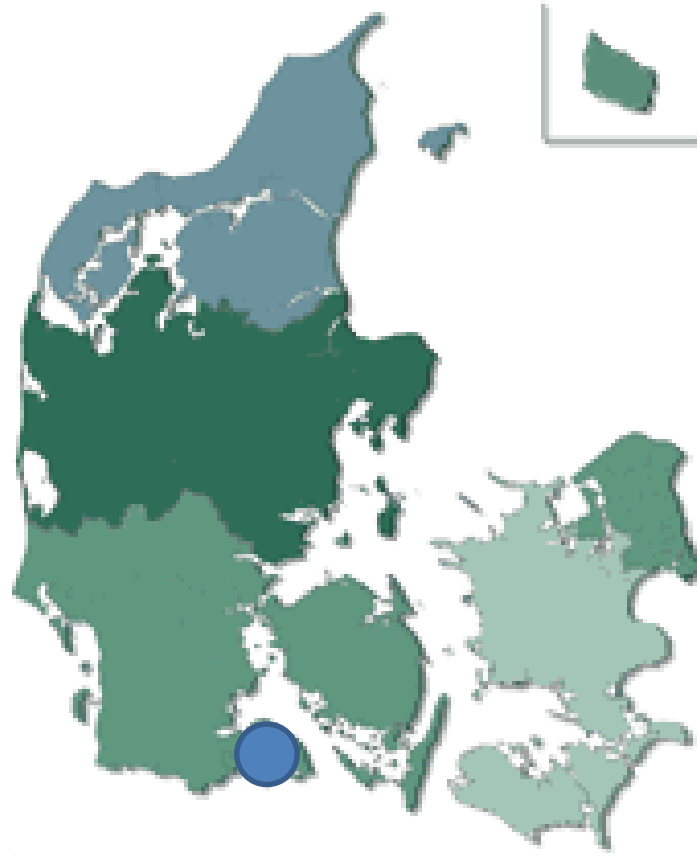


Compression after trauma

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The hospital



The Clinic

- 1.2 tissue viability nurse
- 0.4 medical doctor

- 7 beds in a ward of internal medicine

- **Annual production:**
- 1500 out patient visits
- Support to the wards at the hospital
- Support and advice to home care and nursing homes, using telemedicine
- (catch area 225.000 inhab.)

Trauma

- High energy lesions
- Sharp lesions
- **Low energy lesions**
 - Blunt trauma

Blunt trauma

- Walking round the supermarket -trolleys
- Entering a bus
- Typical locations:
 - Lateral aspect of the calf
 - Anterior aspect of the calf



The typical patient

- From the database:
 - 2/3 are women
 - Average age 71 years
- The patients have had the ulcer for months before they are referred to us

What happens?

deep tissue injury

- The blunt trauma causes cell deformity, which within minutes causes cell damage leading to cell death.*
- Microoedema develops, leading to further cell damage
- The content of the cells is hyperosmolaric and contains enzymes, leading to further destruction
- *Oomens CW et al: Pressure induced deep tissue injury explained. Ann Biomed Eng, 43,2,2015, 297-305

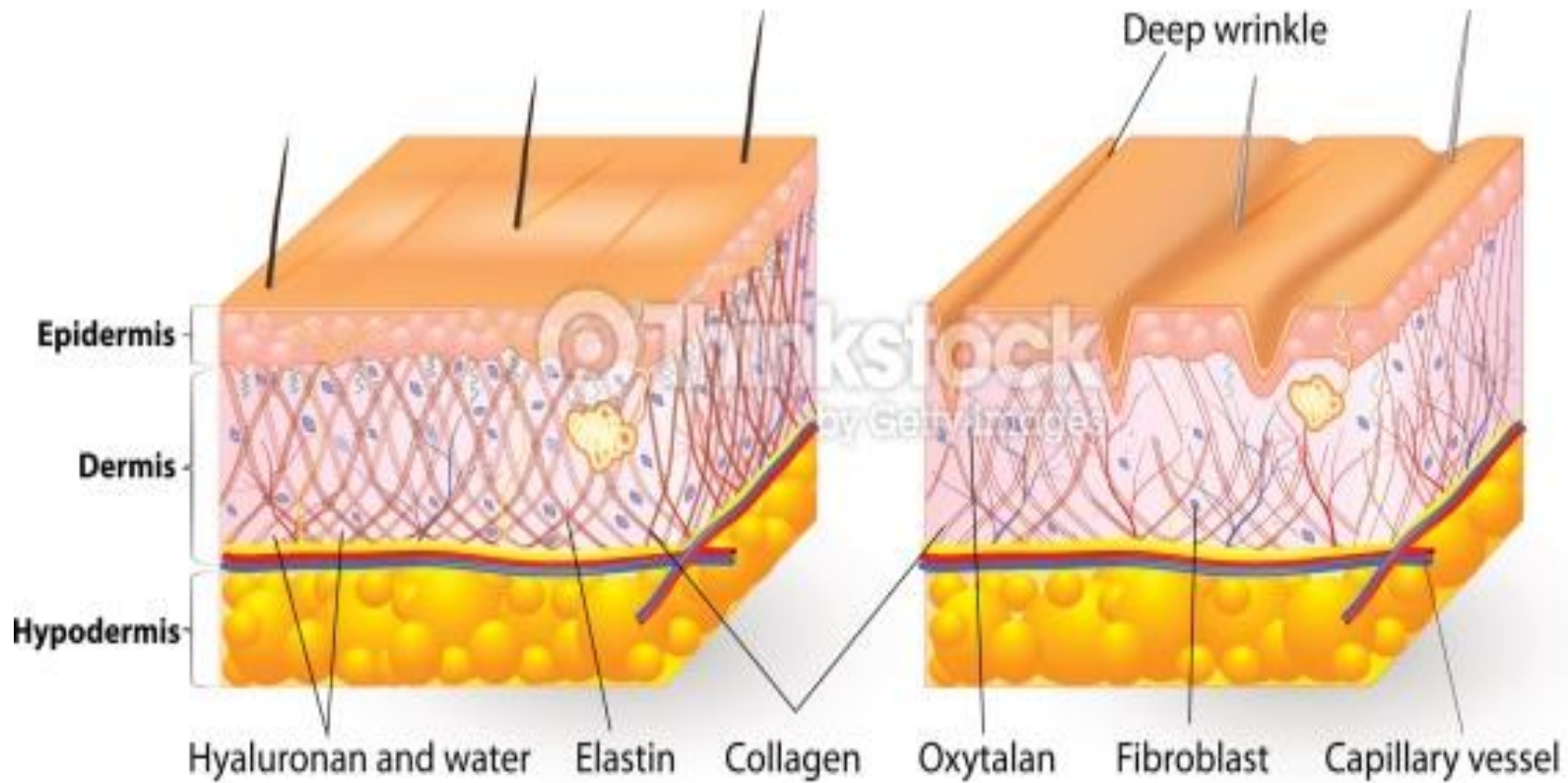
Aging skin

- Aging
 - Reduction of collagen and elastic fibers*
 - Basalmembrane flattens out
 - The epidermis goes thinner
- After menopause the amount of collagen reduces with 30% within a few years
- *Nicholas J et al: Skin Aging and Menopause. Am J Clin Dermatology, 2003,4,6:371-78

Ageing skin

YOUNGER SKIN

OLDER SKIN



Data from our clinical database

TOP 5

1. Traumatic ulcers	558
2. Pressure ulcers	503
3. Venous leg ulcers	450
4. Neuropathic foot ulcers	444
5. Neuroischaemic foot ulcers	283

Jelnes,R: Telemedicine in the management of patients with chronic wounds.
Jour Wound Care: 20,4,2011:187-90

Hypothesis

- In the younger age the higher amount of collagen (and elastin) provides an “internal” compression in relation to deep tissue injury
- As collagen (and elastin) is lost, this capability is lost, allowing the deep tissue injury to develop into an ulcer

Compression applied:

- healing rate for traumatic ulcers:
 - 25% per week
 - Average time to heal: 10 weeks
- Venous leg ulcers:
 - 18% per week

Conclusion

- Compression with an elastic stocking/bandage with moderate to high stiffness, shall be applied in spite of the fact, that no oedema is visible.

future

- **Carry on** trying to convince staff at emergency clinic to apply compression in patients with blunt trauma on the lower leg

Thank you for your attention

