

# Autoimmunziekten

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# Het immuunsysteem: goed of slecht?

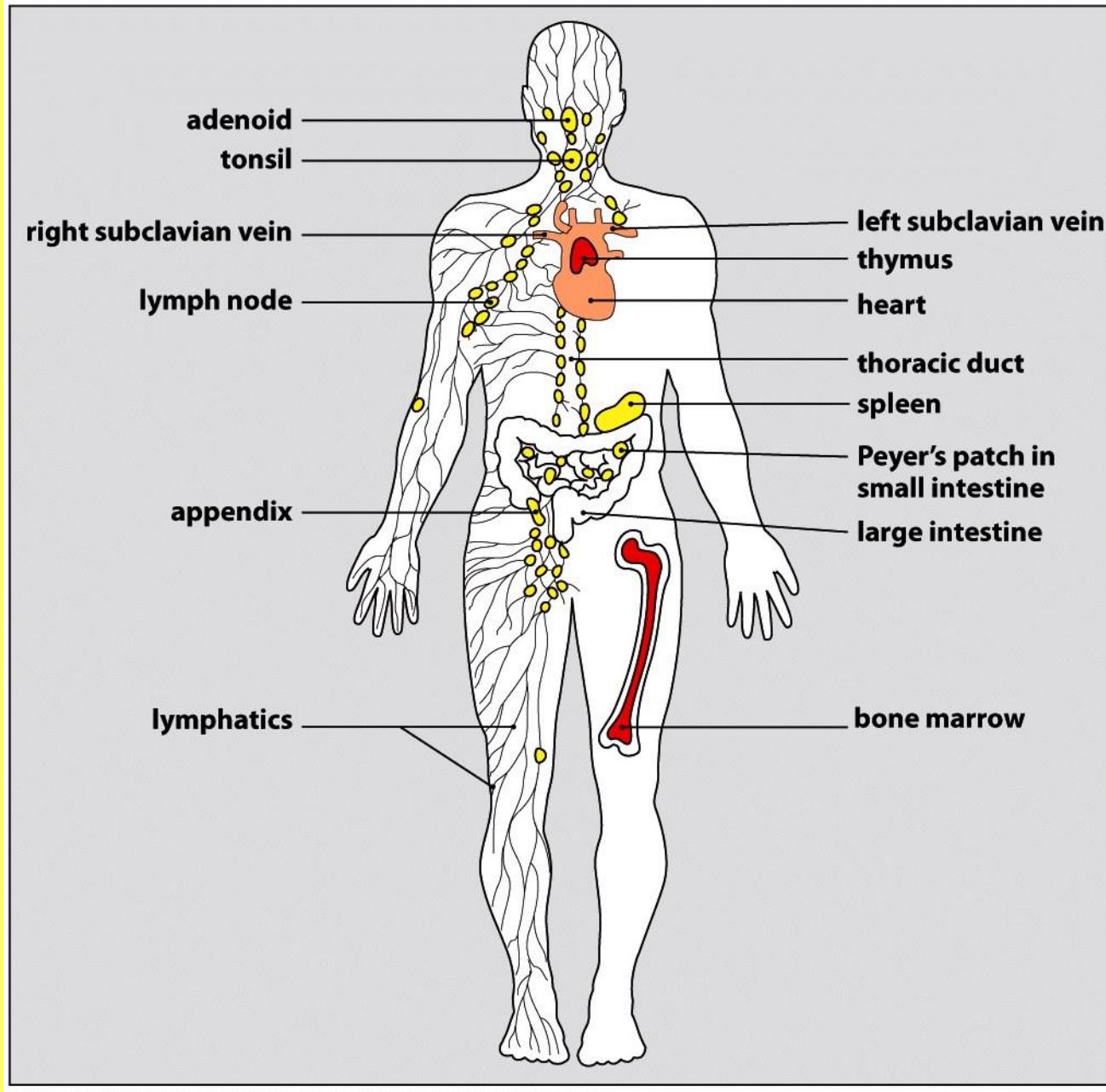


Figure 1.18 The Immune System, 3ed. (© Garland Science 2009)

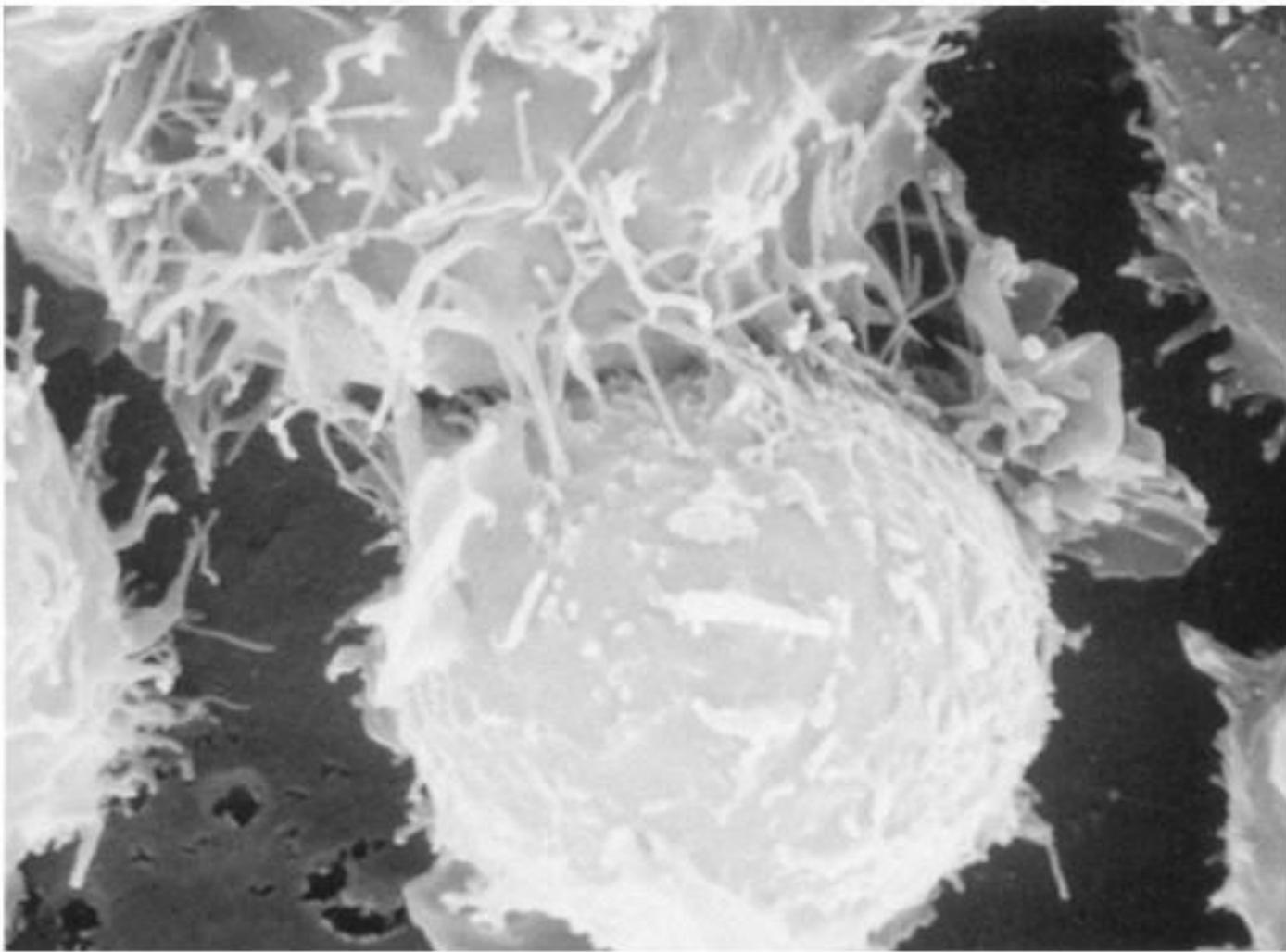
# Speelt het immuunsysteem een rol bij de preventie van ontwikkeling van tumoren ?

Argumenten voor immuunsurveillance:

- a. spontane regressie
- b. in tumoren ontstekingsinfiltraten
- c. vaker tumoren als immuunsysteem minder goed functioneert  
(neonaten, oudere leeftijd)
- d. tumoren vaker bij immuundeficiencies mn. patienten, die met immuunsuppressie behandeld worden

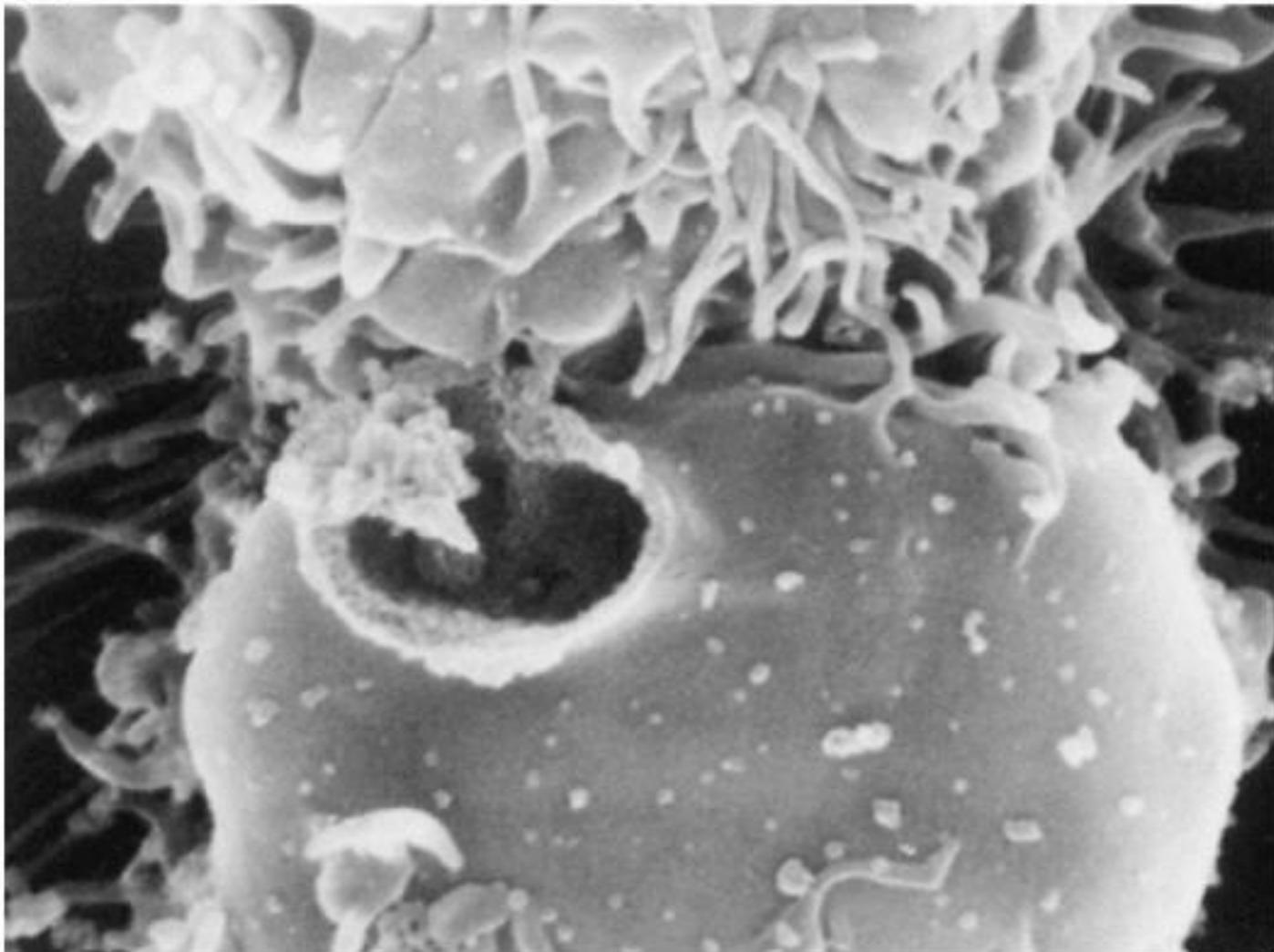
# TUMORCEL EN LYMFOCYT

(a)

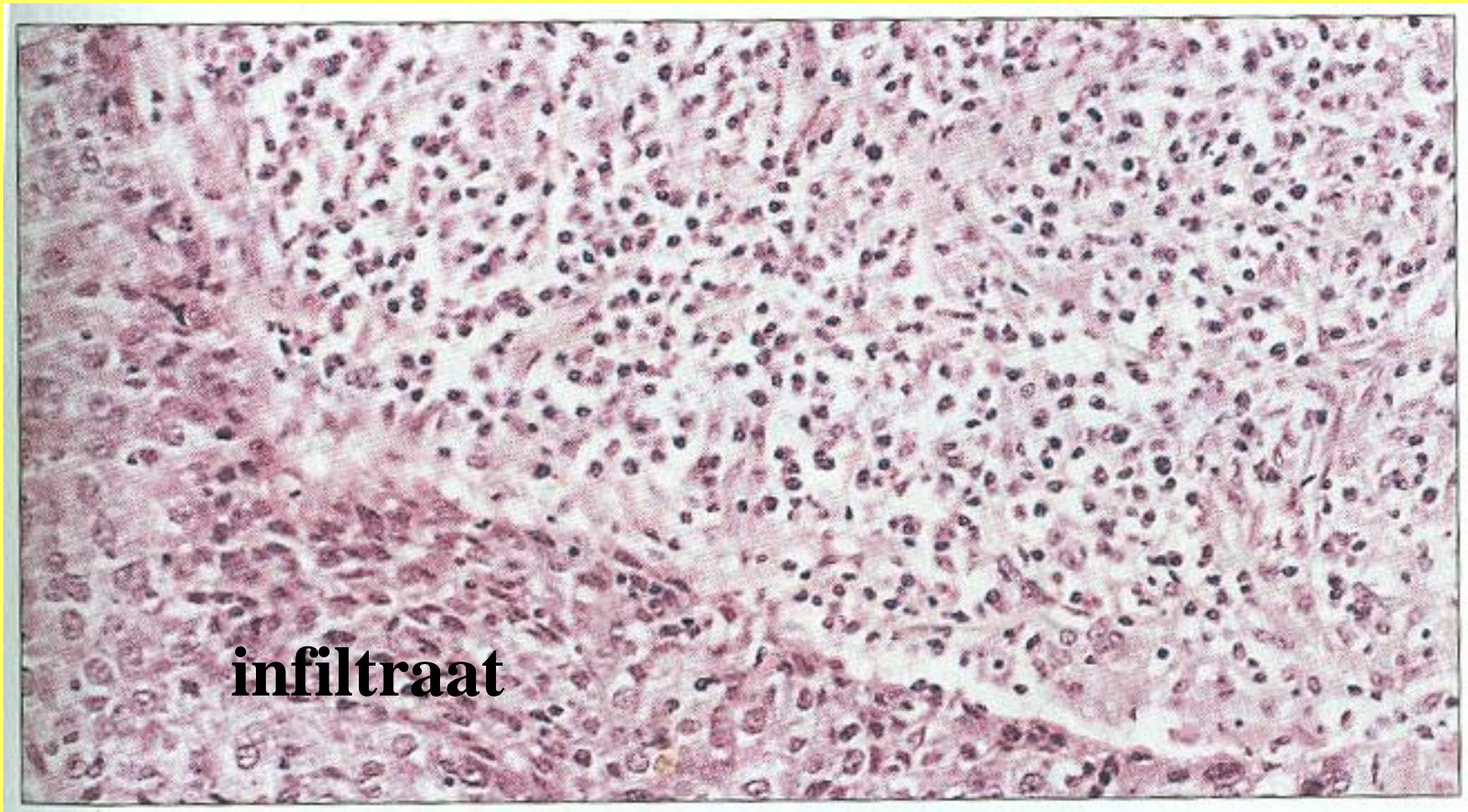


# Kapotte tumorcel na contact met lymfocyt

(b)



Borstkanker cellen zijn omgeven door een infiltraat met cellen van het immuunsysteem

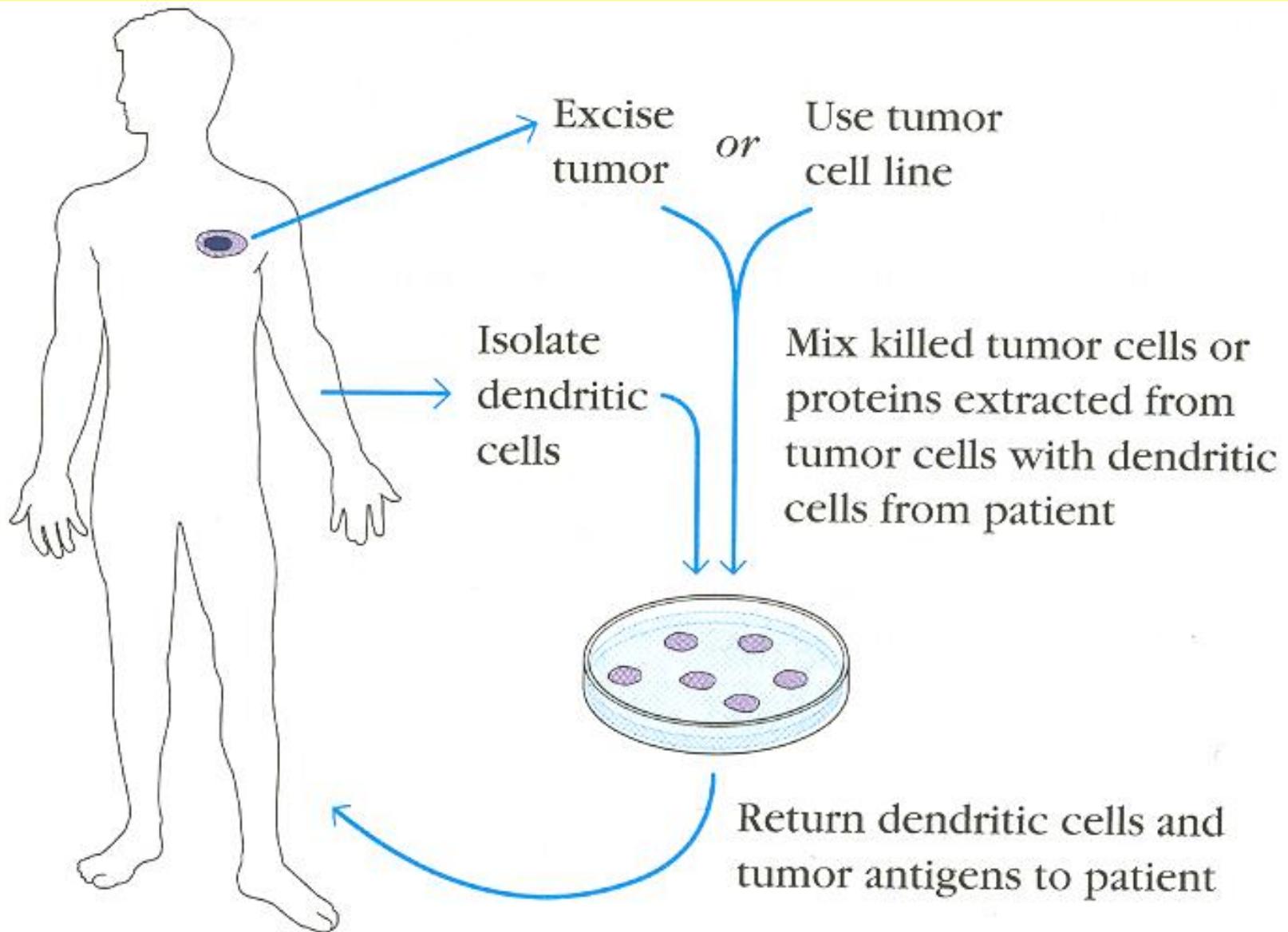


# Kan het immuunsysteem behulpzaam bij preventie en/of bestrijden van kanker ? Voorbeeld borstkanker

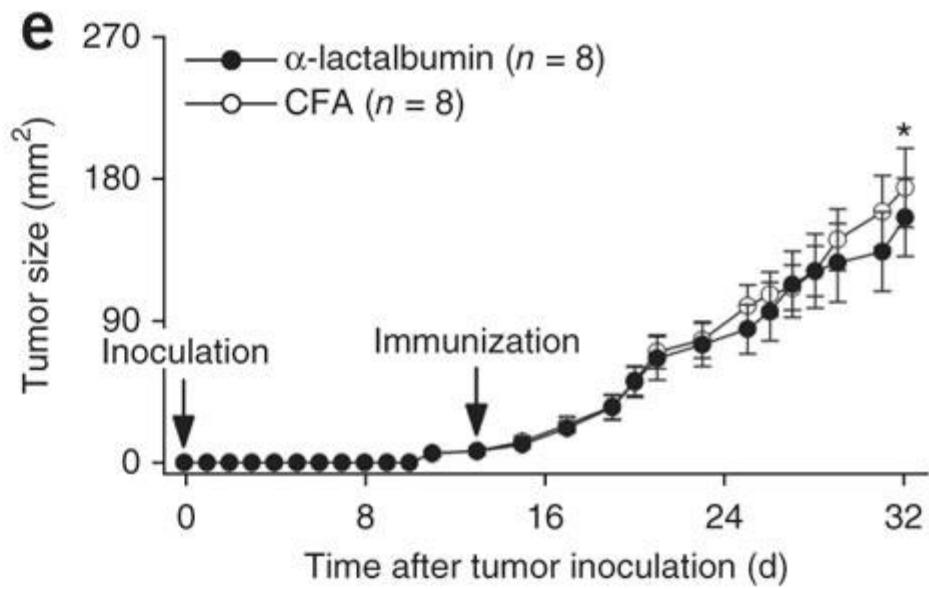
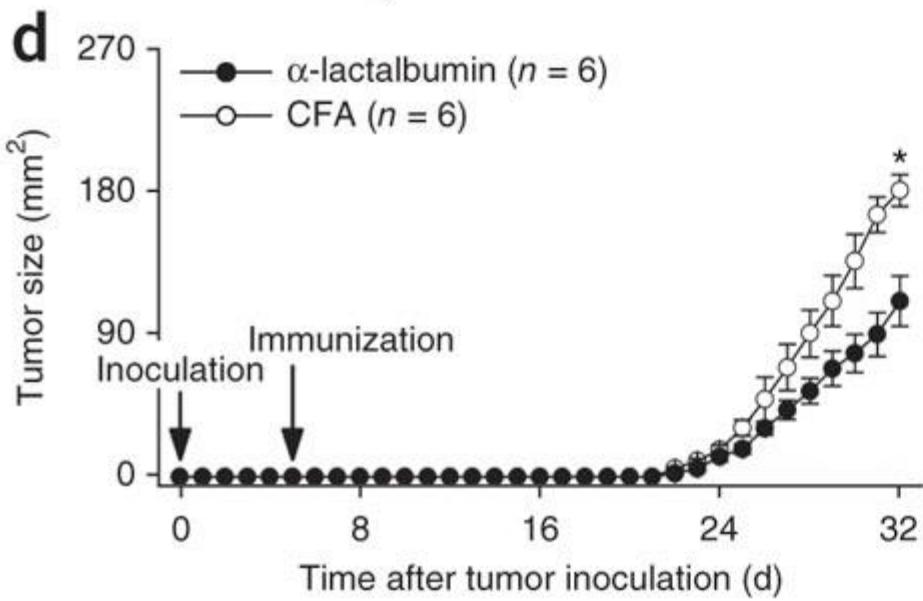
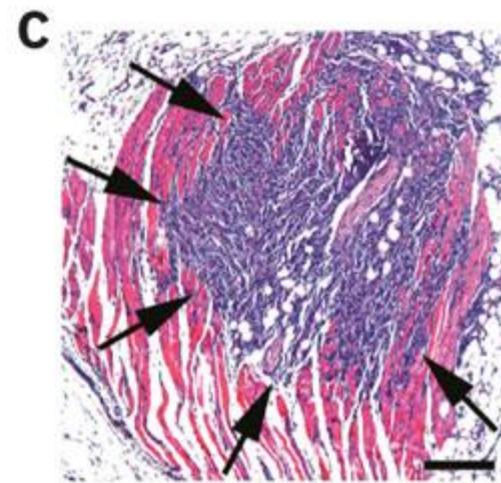
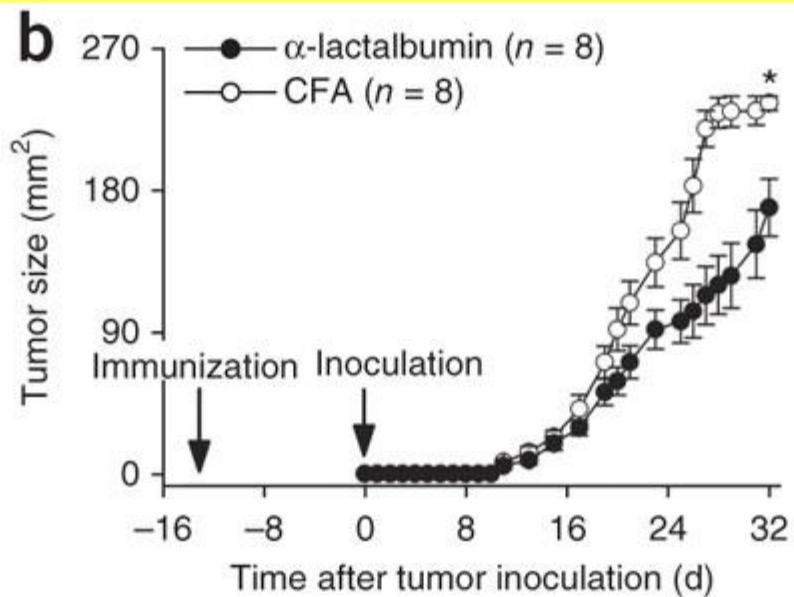
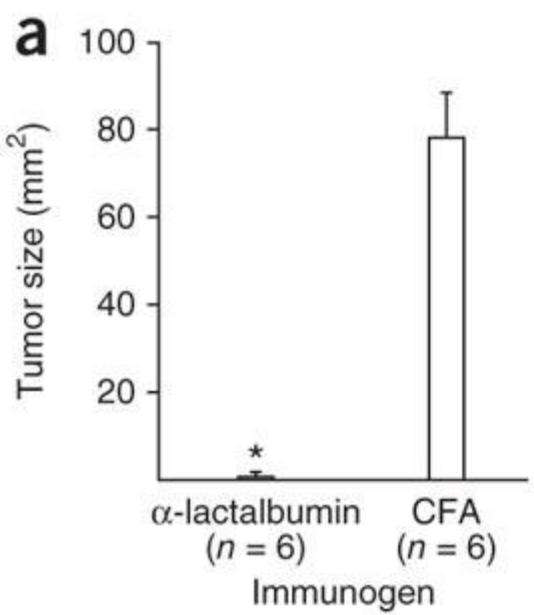
Al > 10 jaar in gebruik:

- Biological Herceptin  
= Antistof tegen HER-2/neu

- Experimenteel
  - DC vaccinatie tegen HER2/neu



Nobelprijs geneeskunde 2011: Ralph Steinman



# Het immuunsysteem: soms slecht?

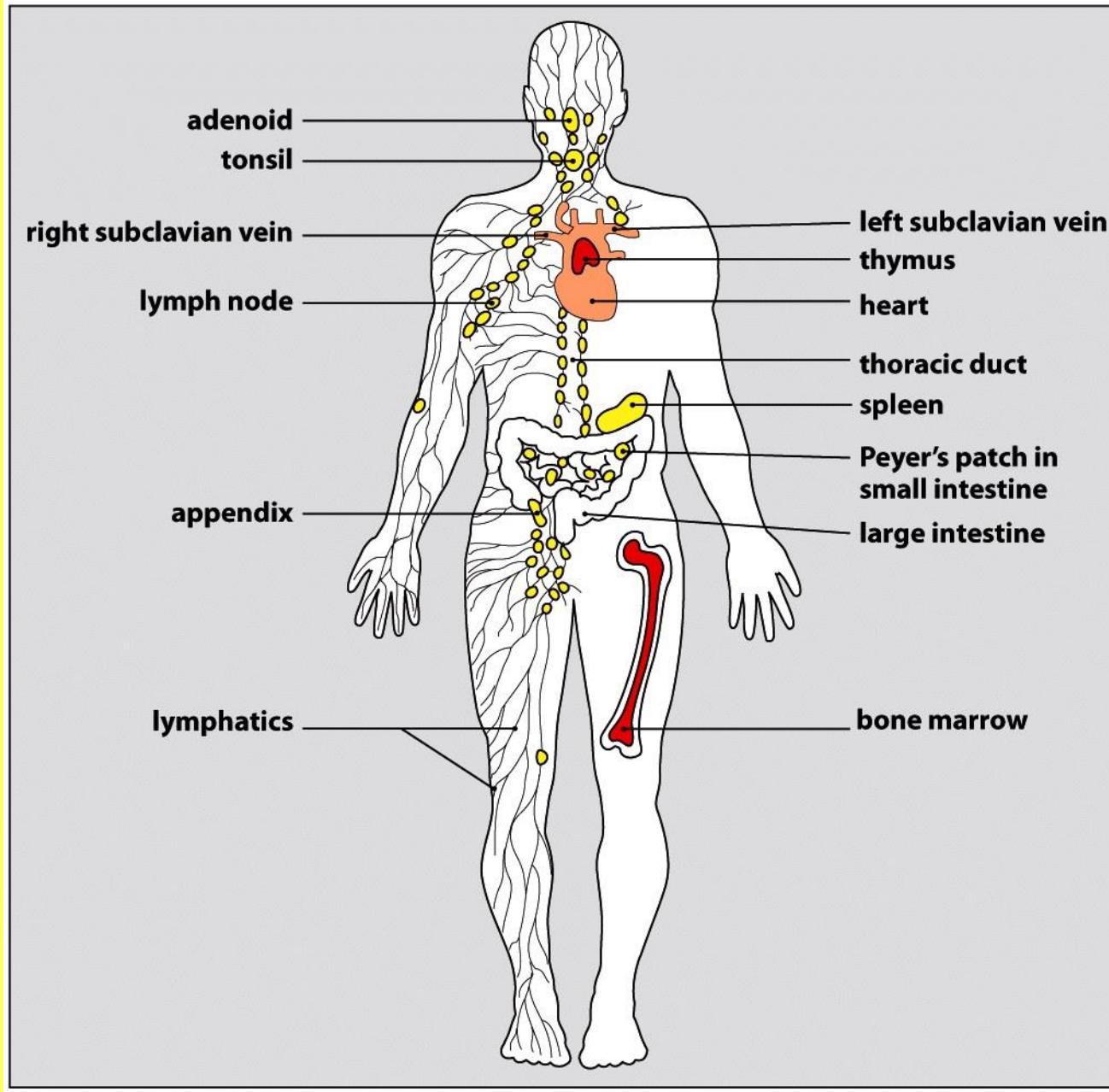


Figure 1.18 The Immune System, 3ed. (© Garland Science 2009)

## AUTOIMMUNE DISEASE

An invisible illness  
where nobody sees  
your fatigue, joint pain  
and internal damage

Lupus Life

BUT THAT DOESN'T MEAN IT IS NOT THERE!

Help Raise Awareness ❤

yes, i have an  
autoimmune  
disease.

no, i didn't "do this  
to myself."

[stoffsickpeoplehavetoputupwith.tumblr.com](http://stoffsickpeoplehavetoputupwith.tumblr.com)

Ziekte van Addison  
Bechterev  
Hashimoto  
Ziekte van Graves  
Diabetes Mellitus  
Coeliakie  
Reumatoïde arthritis  
Pernicieuze anemie

# Klassieke autoimmuun ziekten

- 5,29% van de bevolking
- Vaker bij vrouwen, vaker in families
- Soms alleen een oorgan;  
soms meerdere organen  
(= systeemziekten)

Marrack et al Nature Medicine 2001

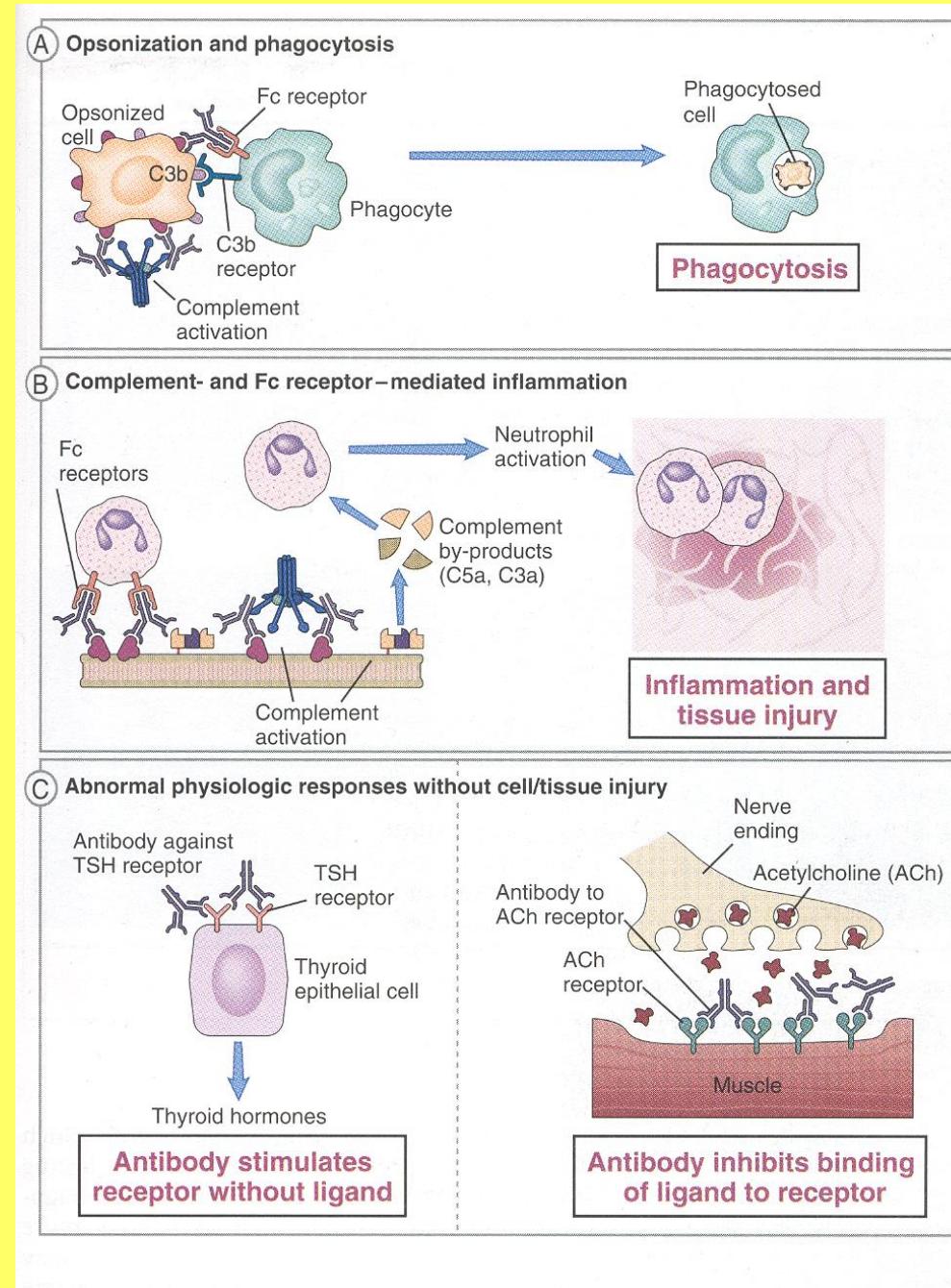
# Voorbeelden: rhesusantagonisme



spierziekte

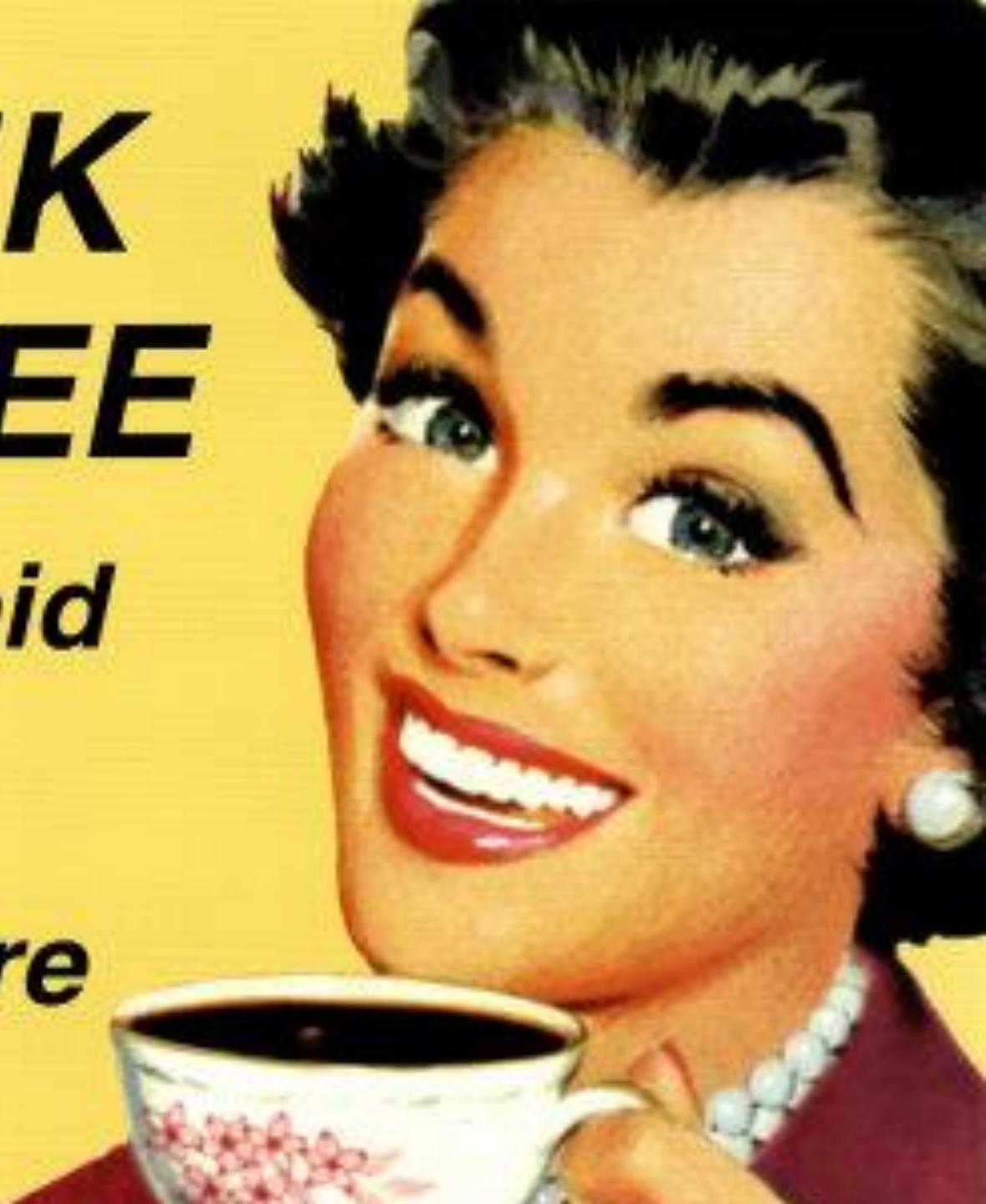


Hyperthyreoidie



# **DRINK COFFEE**

*Do Stupid  
Things  
Faster  
with More  
Energy*

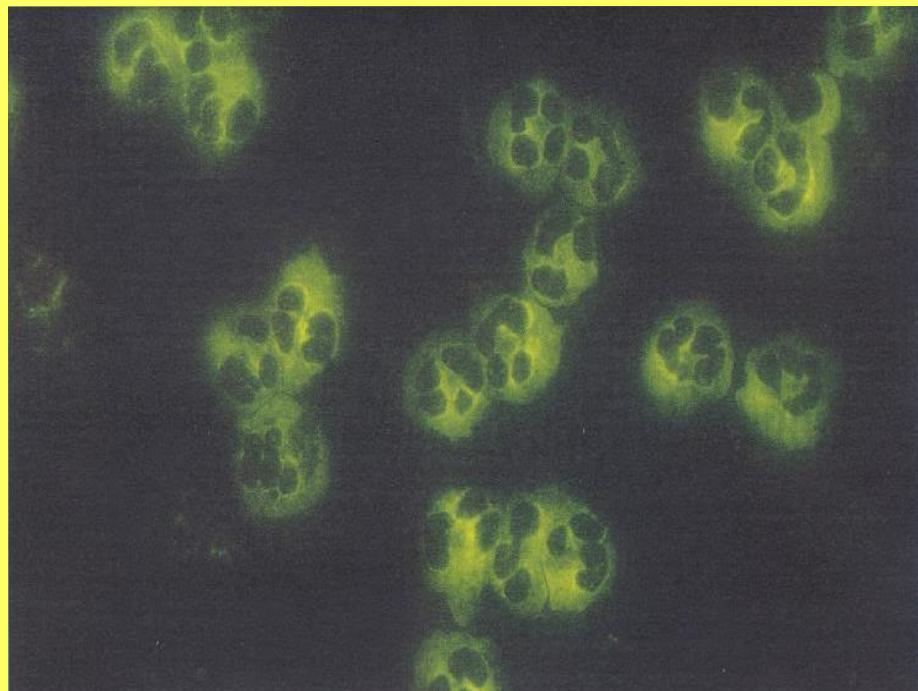




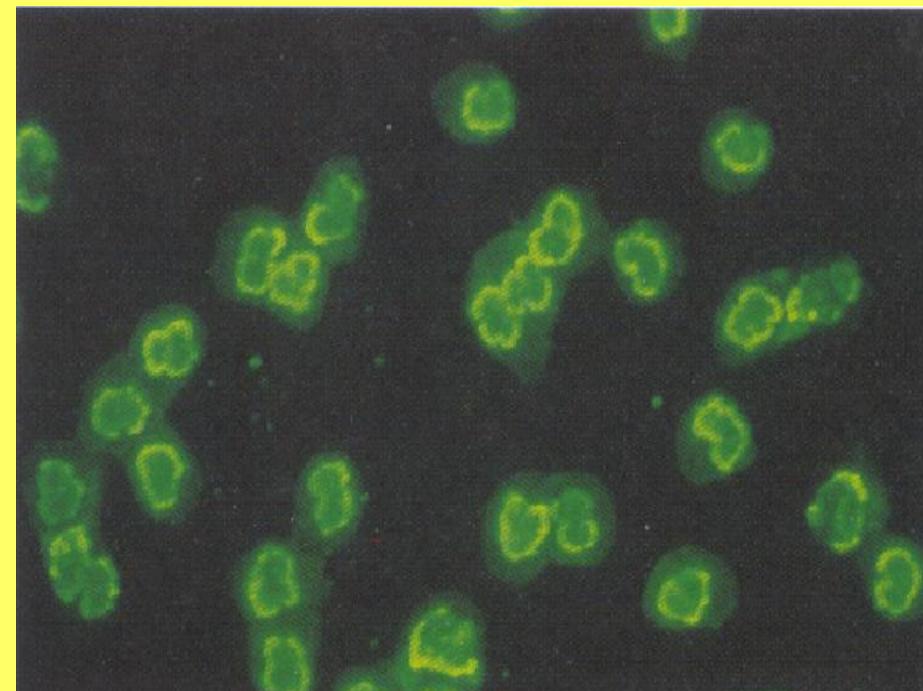
vasculitis

# Vasculitis wordt veroorzaakt door ANCA

Cohen Tervaert JW. Proefschrift. 1990 (cum laude)

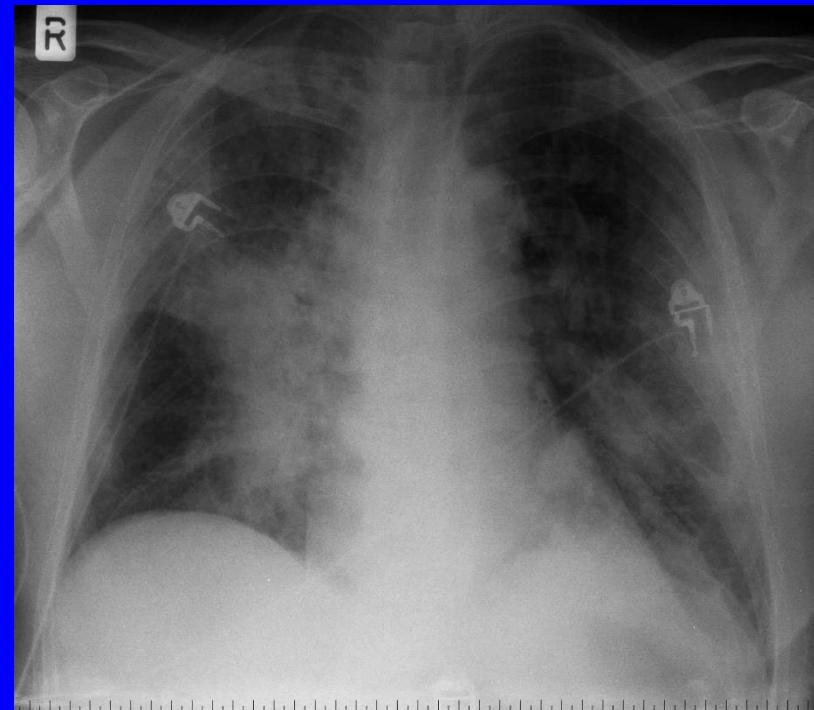


cANCA



pANCA

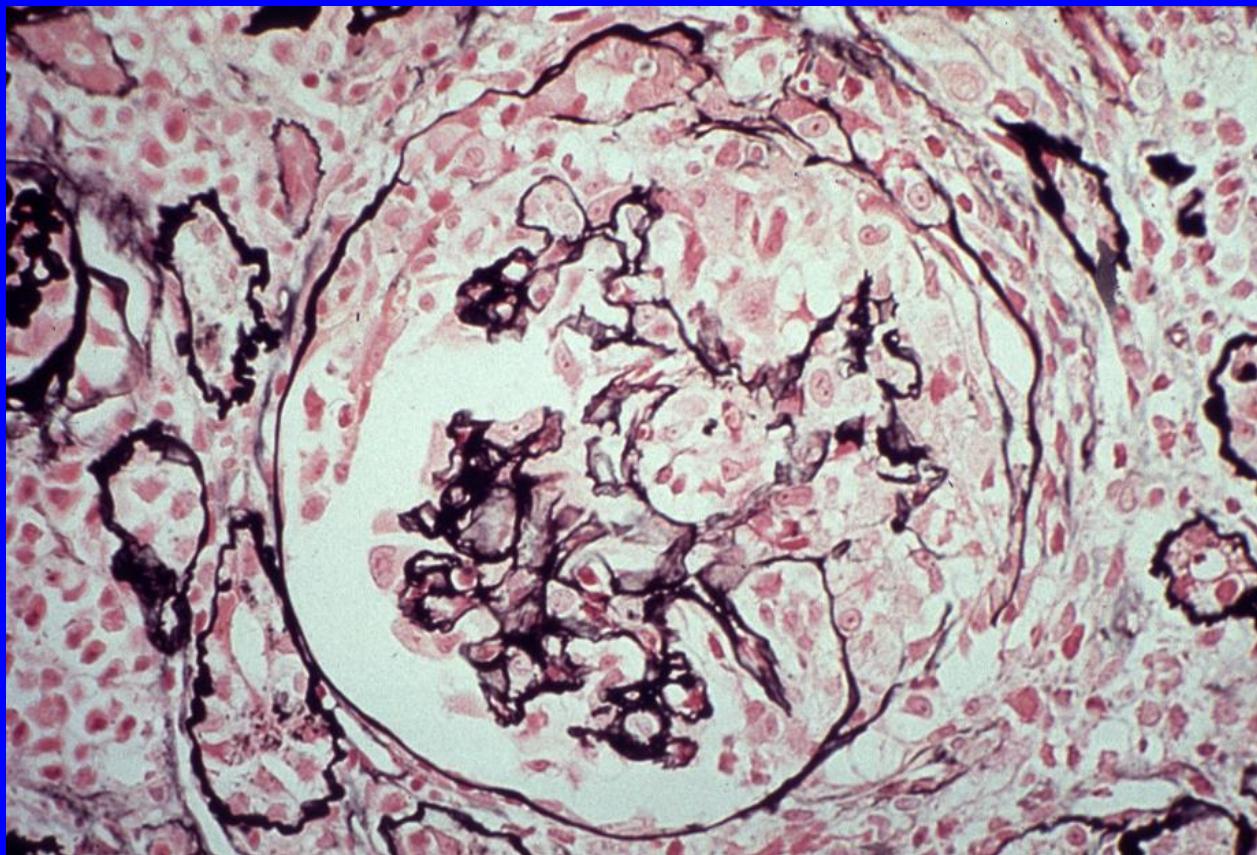
# ANCA-associated vasculitis



Cohen Tervaert et al Kidney Int 1990;

Cohen Tervaert et al Arthritis Rheum 1990; Cohen Tervaert et al Am J Med 1991

Local focal necrotising crescentic glomerulonephritis; IF: pauci-immune



Hilhorst et al JASN 2013

# Vasculitis: een ernstige ziekte

In Limburg tot 2000:  
1 jaars overleving 45%

Vanaf start expertise centrum  
Maastricht (2000):  
1 jaars overleving 85%

Centrum helaas in 2012 opgeheven



LET'S HAVE ONE MORE  
AND THEN WE'LL GO !!

# sclerodermie

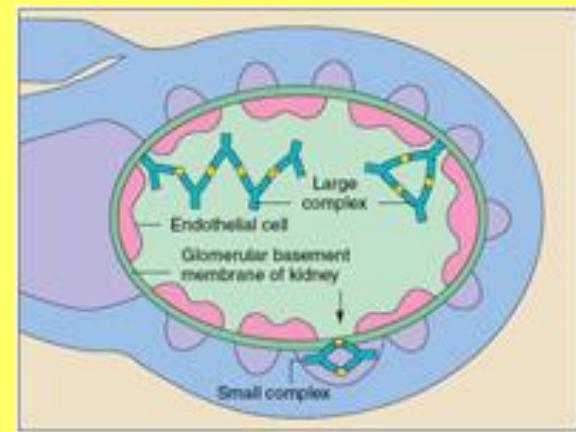




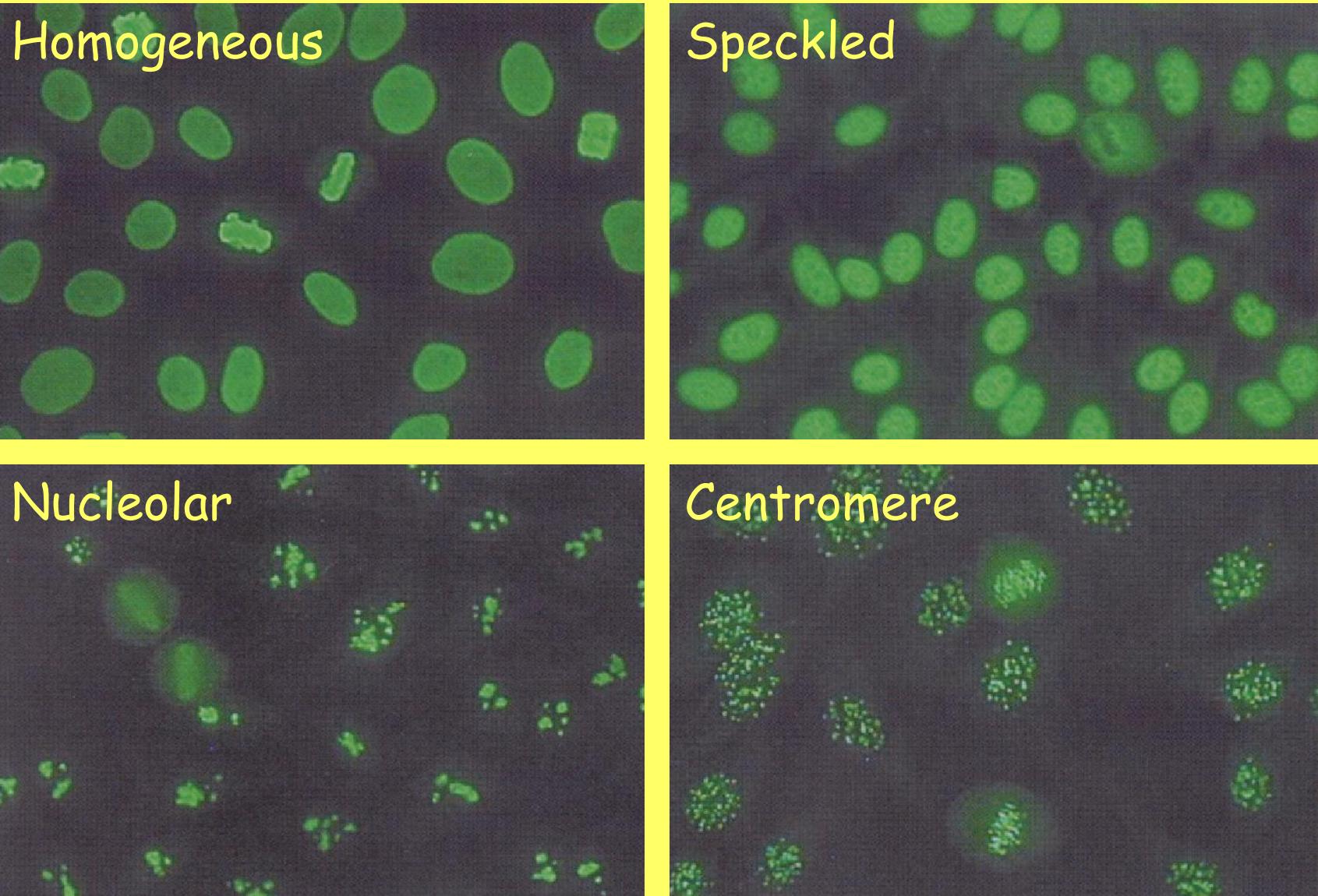
<http://dermis.net>

# SLE: Systemic lupus erythematosus

- Antistoffen tegen kernen (ANA)
- Huid, gewrichten en nieren vaak aangetast
- Therapie: prednisolon and immunosuppressives



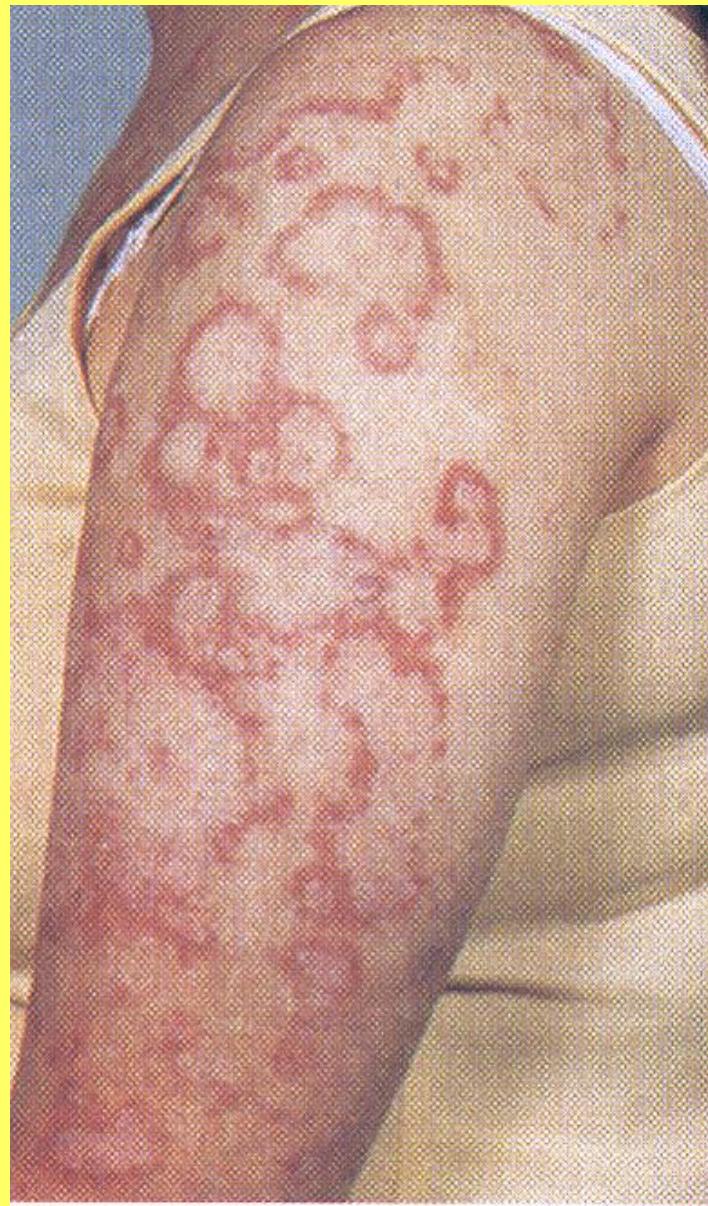
# Anti-Nuclear Antibodies





**SCLE:**  
**85% fotosensitive**

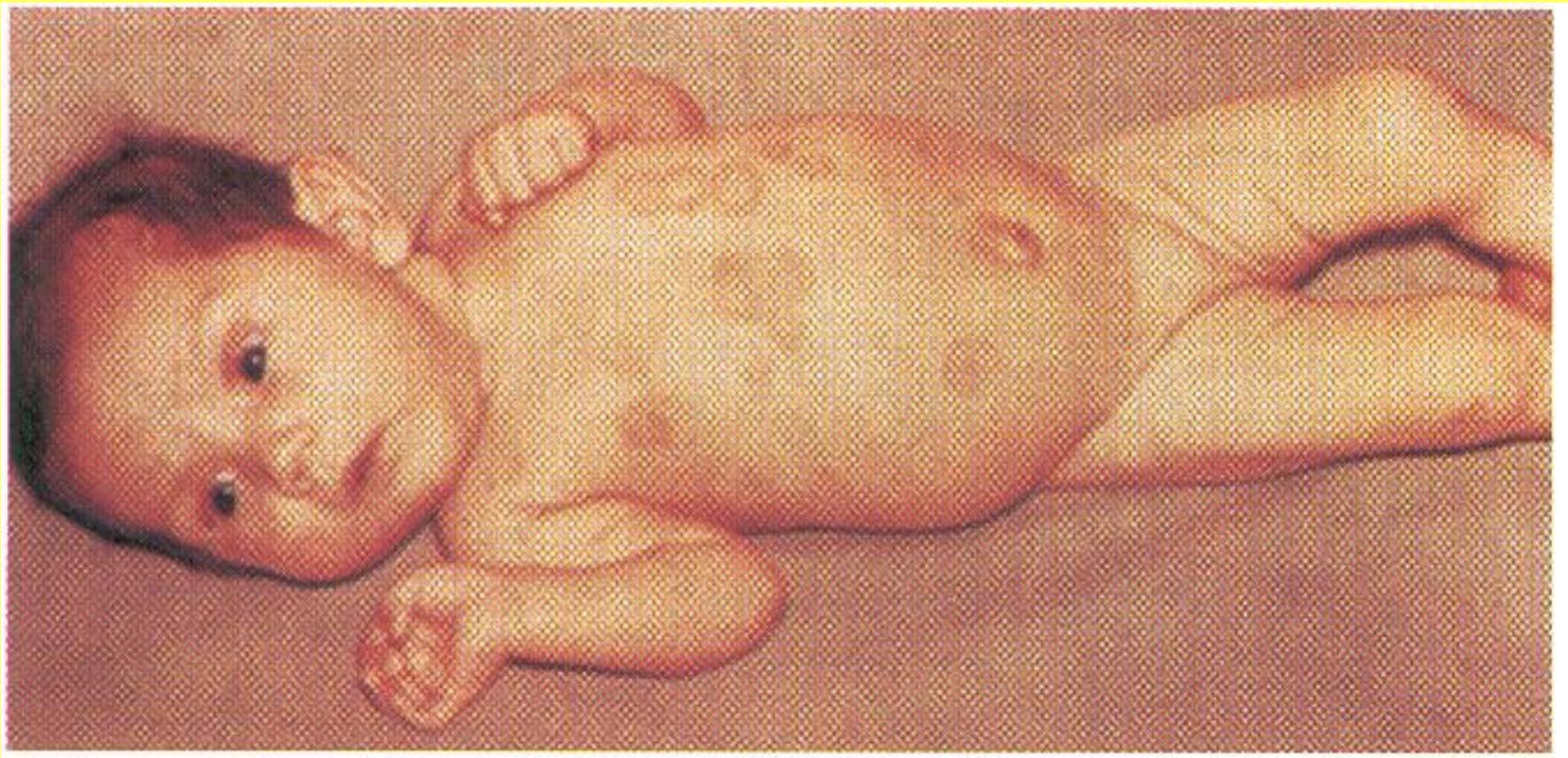
**50% annular/  
polycyclic**



## Raynaud's phenomenon



## **Neonatal lupus**



# Wat veroorzaakt auto-immuniteit ?

Bad luck hypothesis:

- Genen
- Omgevingsfactoren
- Virussen/bacterieen

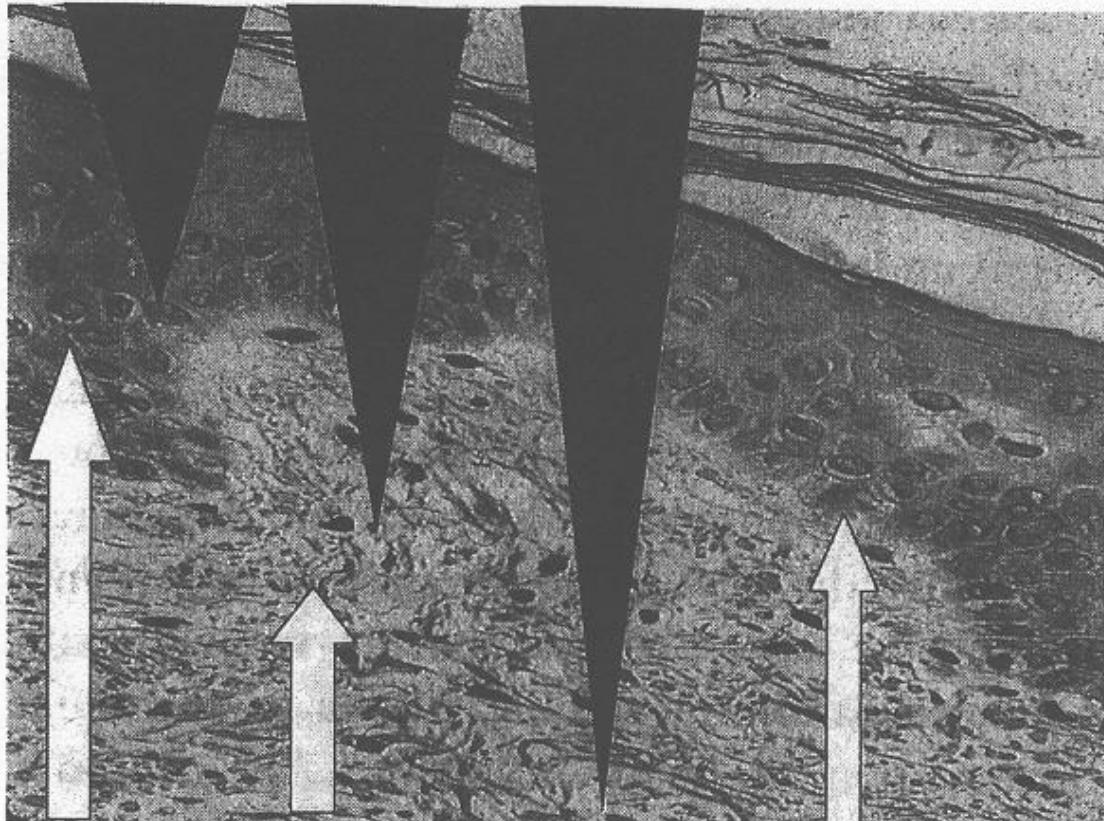
Hmm...Bad Luck seems to follow me everywhere....



" Pillars of Destiny can help "  
(C) Cecil Lee, Geomancy.net, 2002

# UV in SLE

Depth of penetration  
UVB      UVA      UVA-I

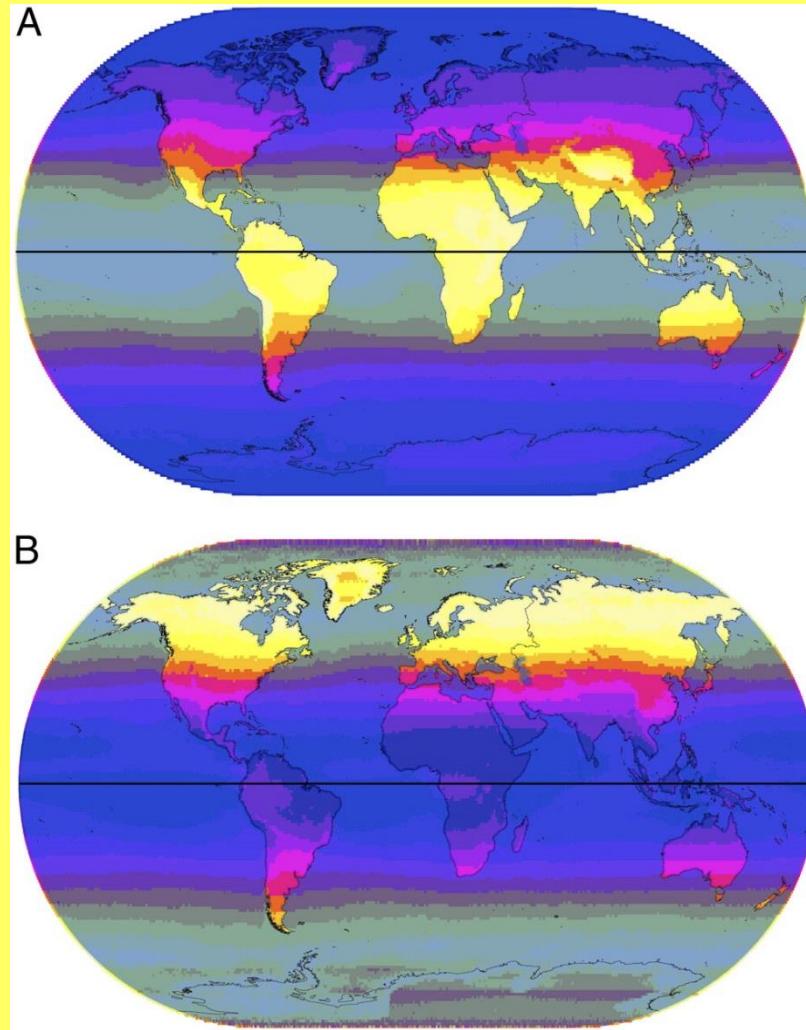


Epidermis

Dermis

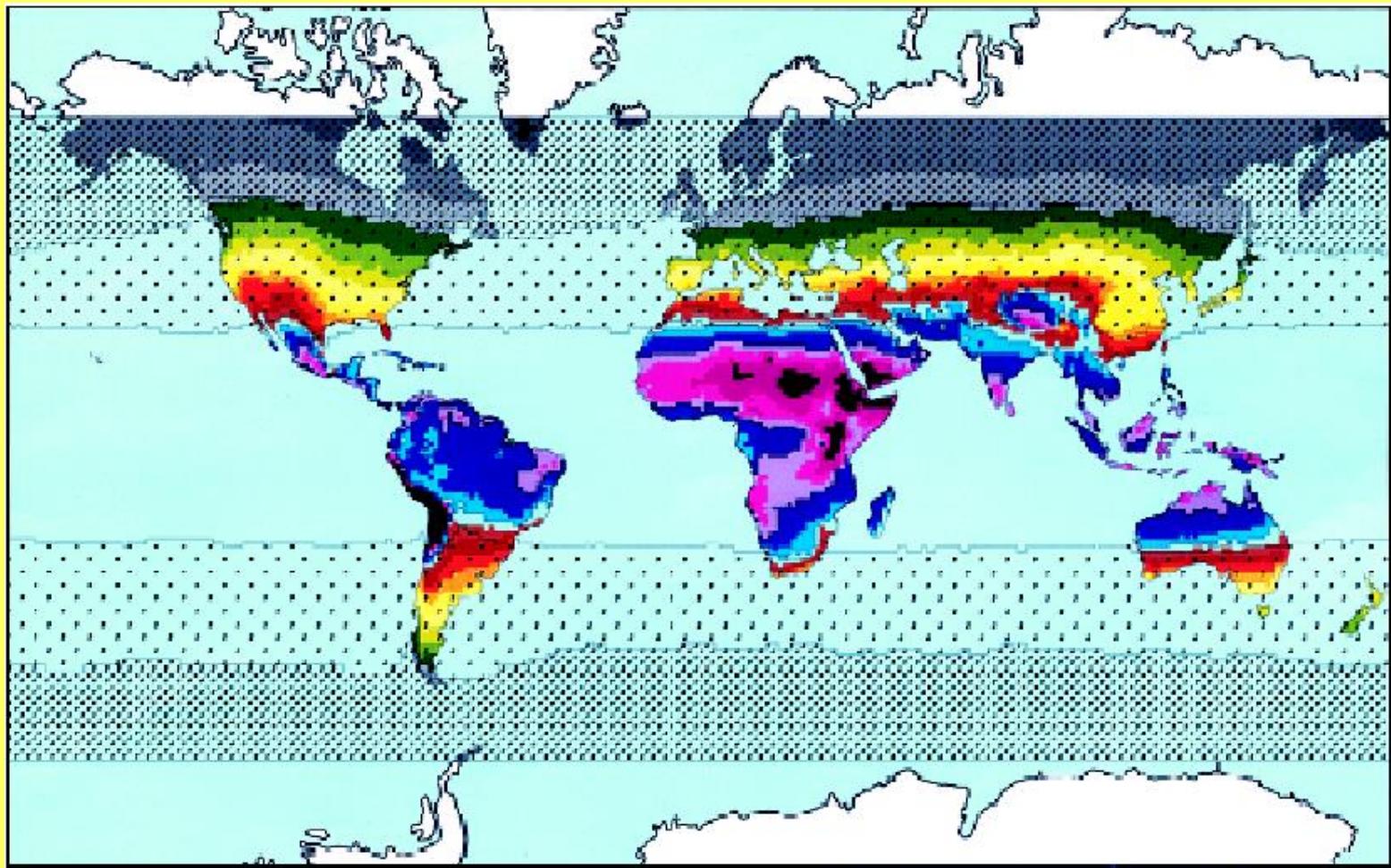
Dermal-epidermal  
junction

(A) Annual mean UVB (305 nm).

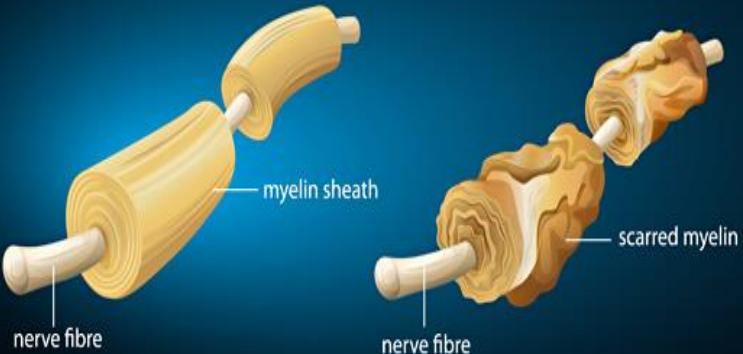


Jablonski N G , Chaplin G PNAS 2010;107:8962-8968

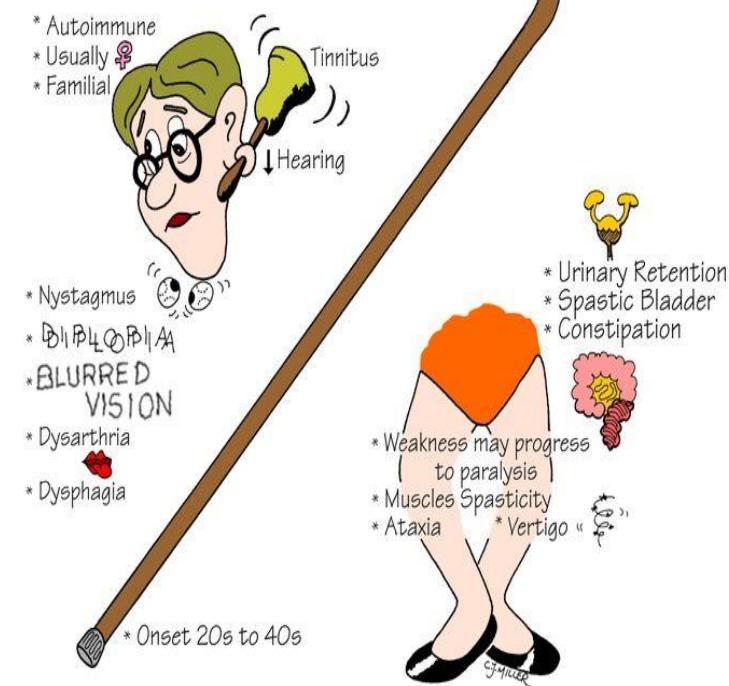
# Sun-exposure and MS (I)



## Multiple Sclerosis - Demyelination



## MULTIPLE SCLEROSIS



## MULTIPLE SCLEROSIS

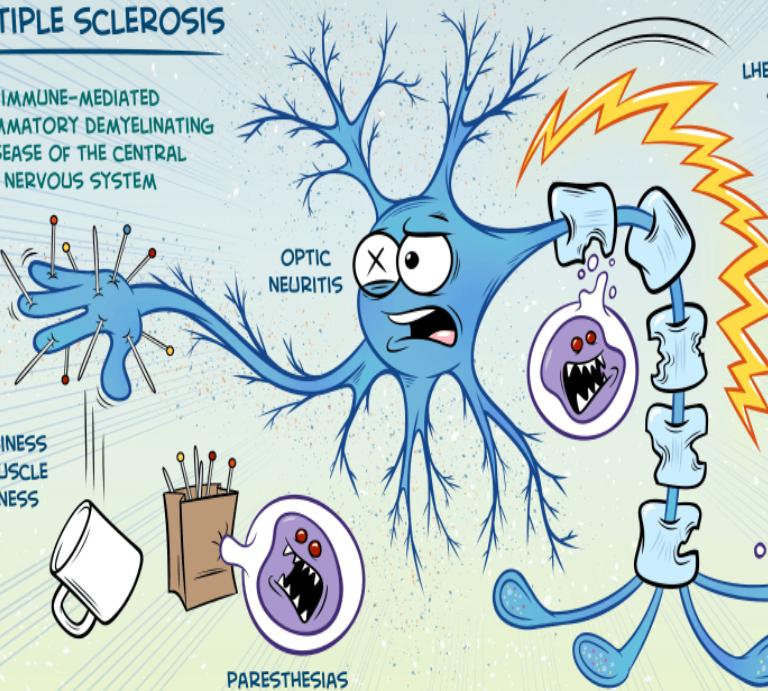
IMMUNE-MEDIATED  
INFLAMMATORY DEMYELINATING  
DISEASE OF THE CENTRAL  
NERVOUS SYSTEM

OPTIC NEURITIS

CLUMSINESS  
AND MUSCLE  
WEAKNESS



PARESTHESIAS



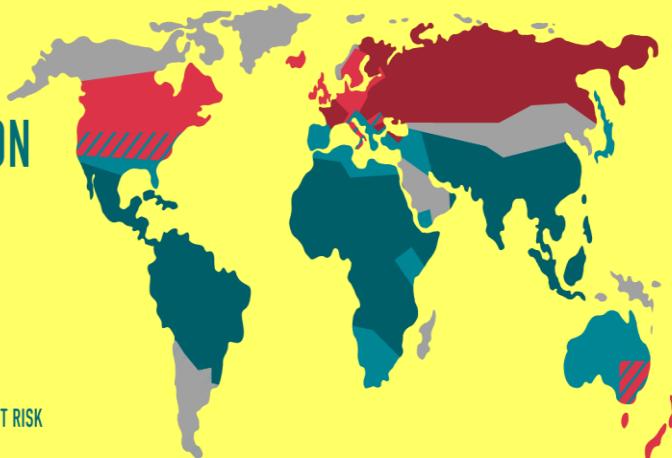
ONSET BETWEEN  
15 AND 50 YEARS  
OF AGE

TX OPTIONS INCLUDE  
CORTICOSTEROIDS, BETA  
INTERFERONS 1A AND 1B,  
& GLATIRAMER ACETATE

© 2016 JORGE MUNIZ

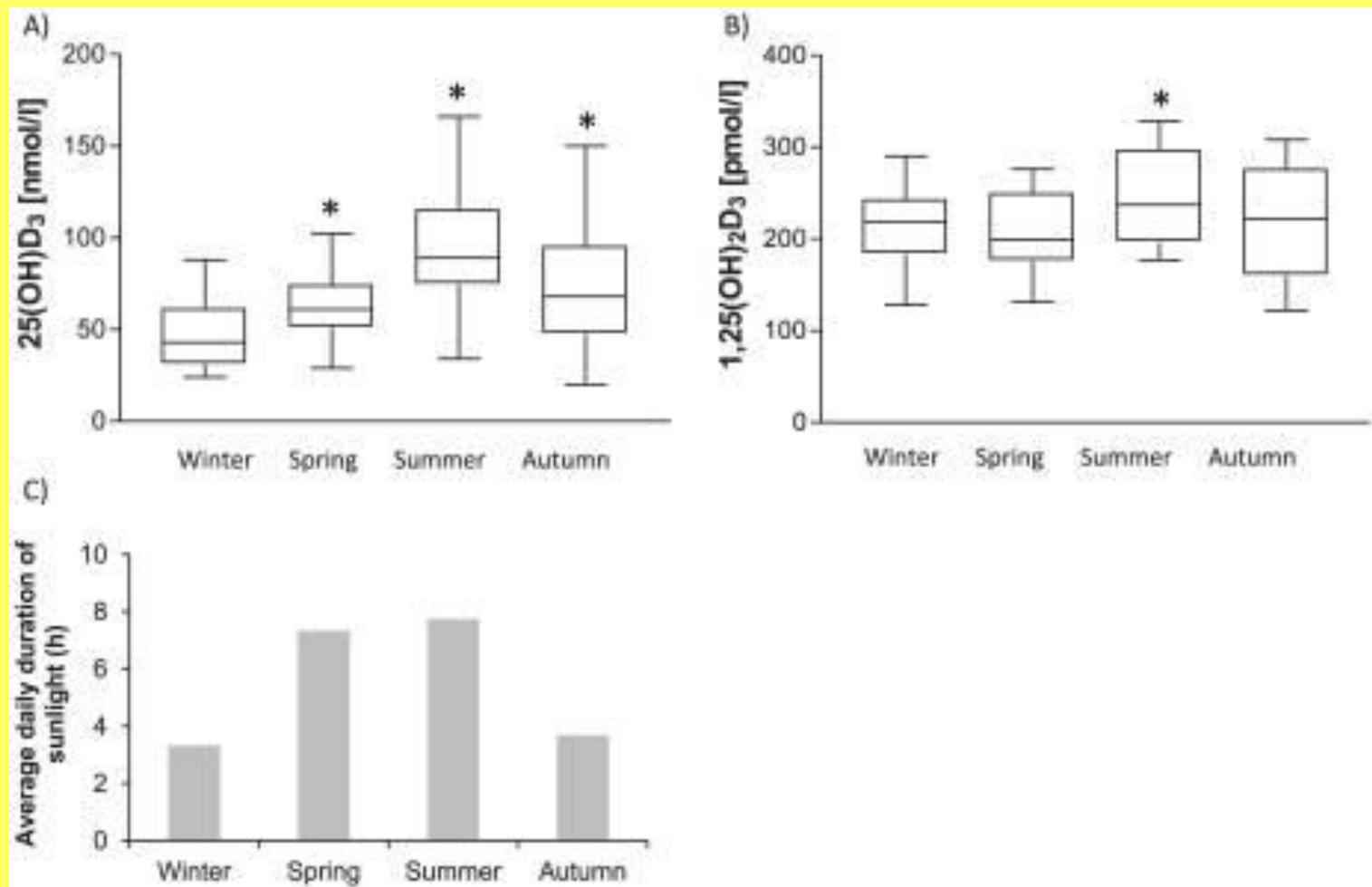
## GLOBAL DISTRIBUTION OF MS

- █ HIGH RISK
- █ PROBABLE HIGH RISK
- █ LOW RISK
- █ PROBABLE LOW RISK
- █ NORTH-SOUTH GRADIENT RISK
- █ OTHER RISK



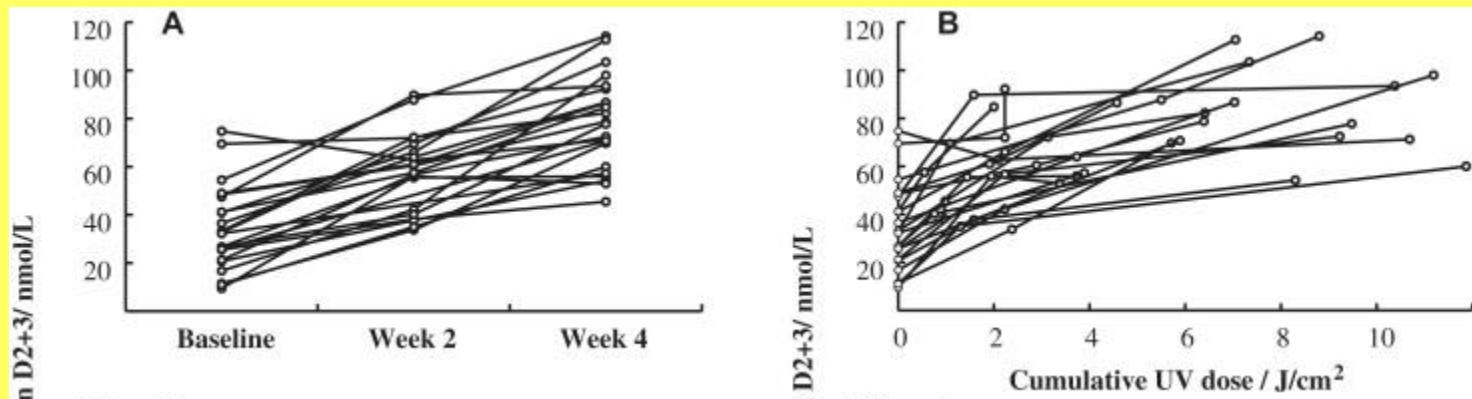


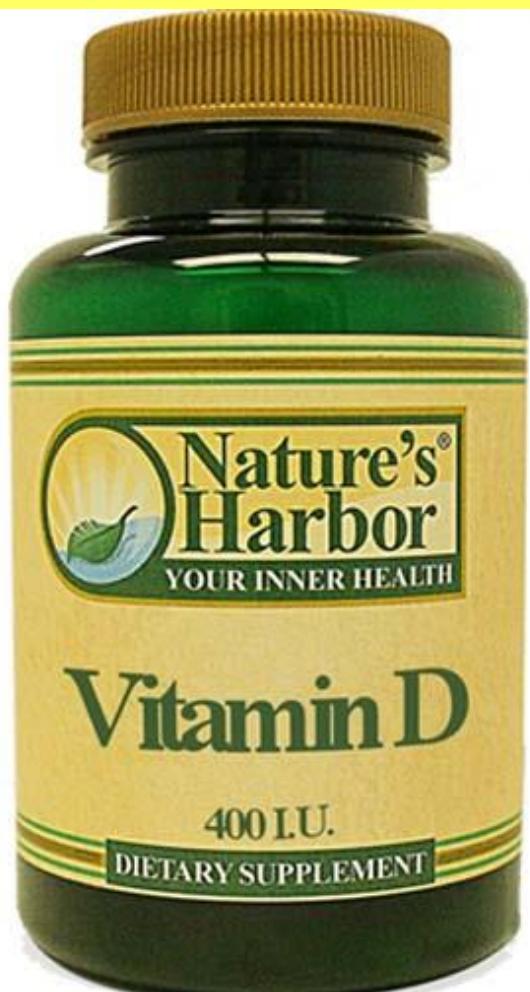
Vitamin D = the sunshine vitamin



25-vit D levels in healthy Dutch people are related to average daily sunshine

3 x per week UV-B therapy:  
Increase in Vitamin D level: 44 nmol/l  
*Milliken et al JACI 2012*





# VitaminD



The body itself makes  
vitamin D when it is  
exposed to the sun

Cheese, butter,  
margarine,  
fortified milk,  
fish, and fortified  
cereals are food sources  
of vitamin D



ADAM.

# Immune modulation with vitamin D



# Vitamin D: the wonder pill

**Suzanne ESSENTIALS**

**SIP OF SUNSHINE™**

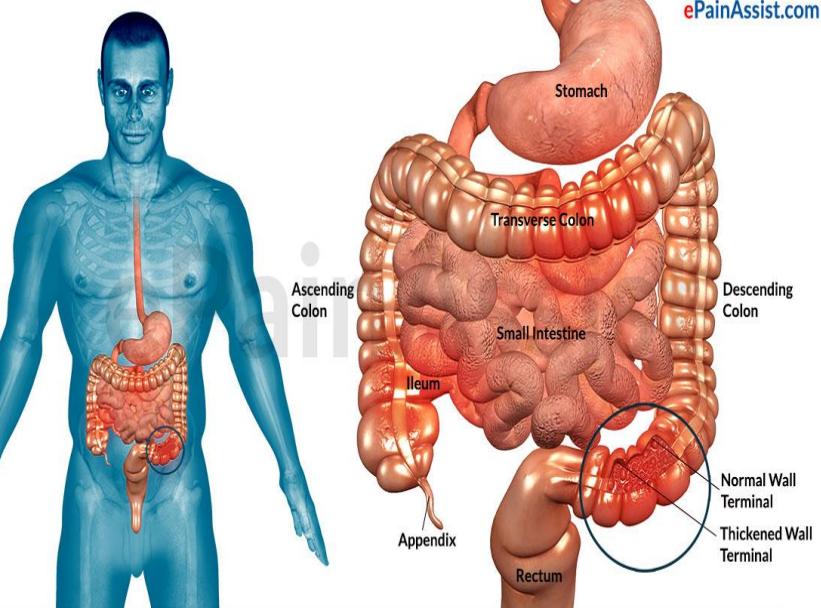
*Have you had your 15 minutes of sunshine today?*

- WITH VITAMIN D AND SOD!
- Powerful Antioxidants
- Boosts Immune System
- Fights Free Radicals
- Promotes Cardio Vascular Health
- Promotes Healthy Bones and Joints
- Great Tasting Pink Lemonade Flavor

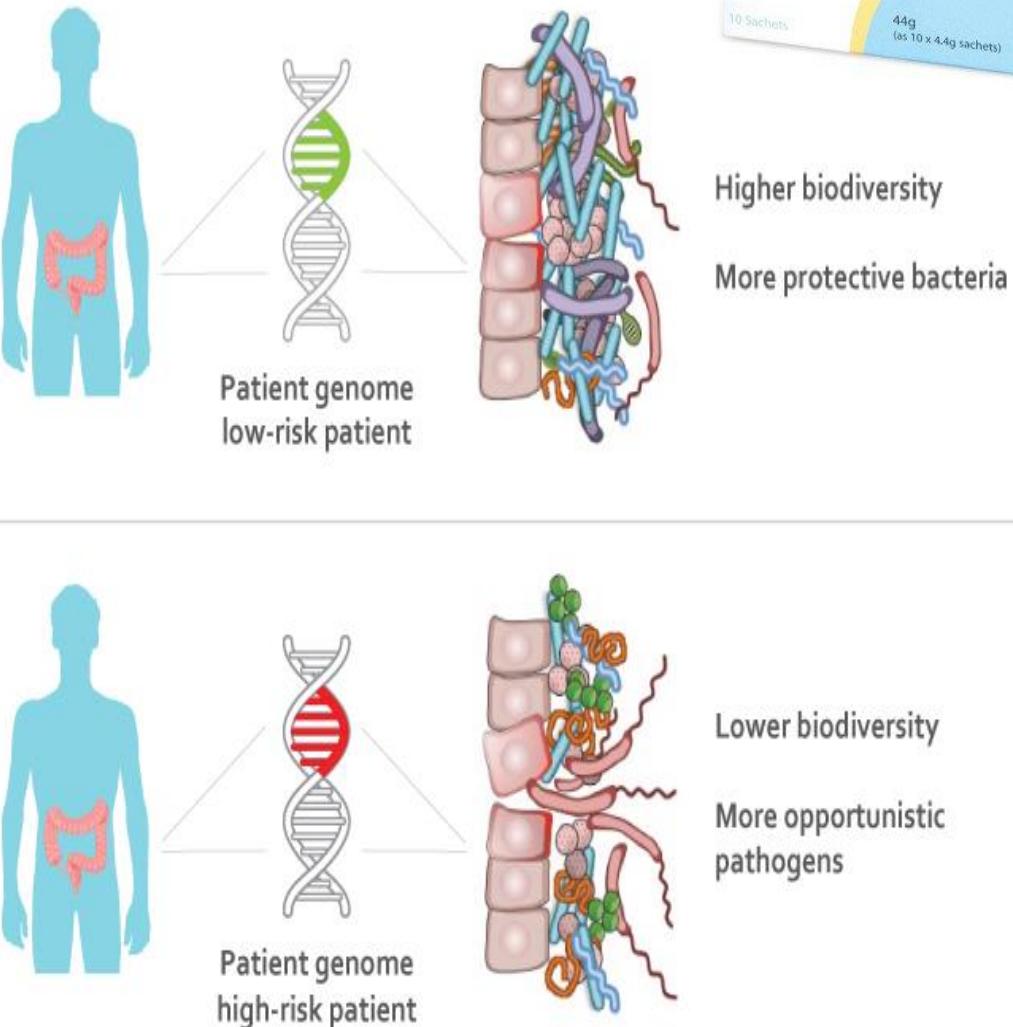
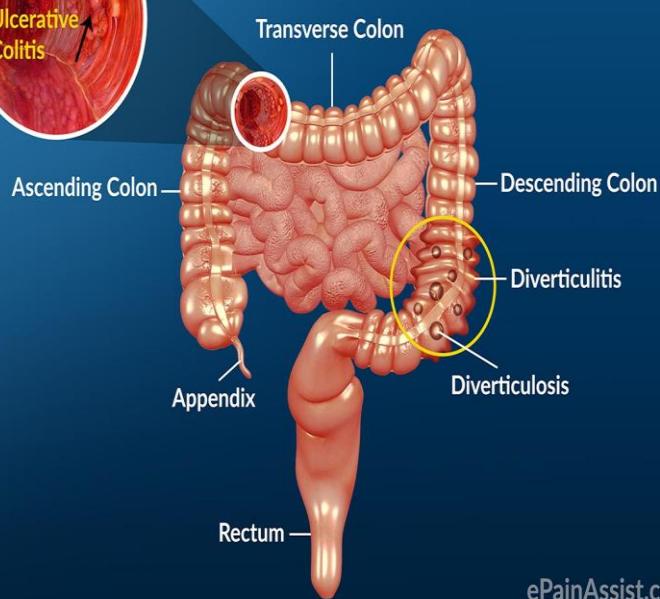
**Now Available!**

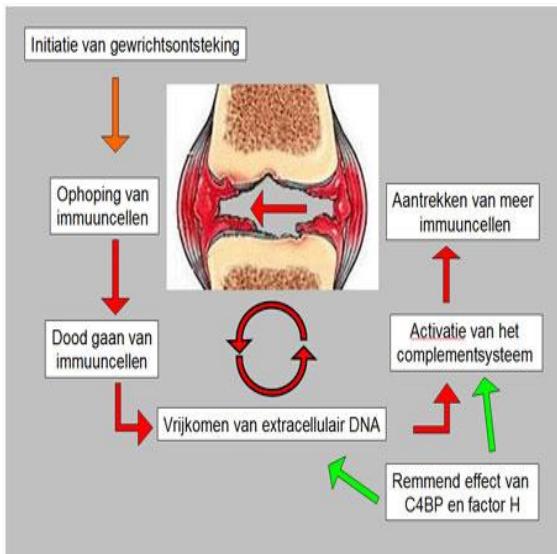
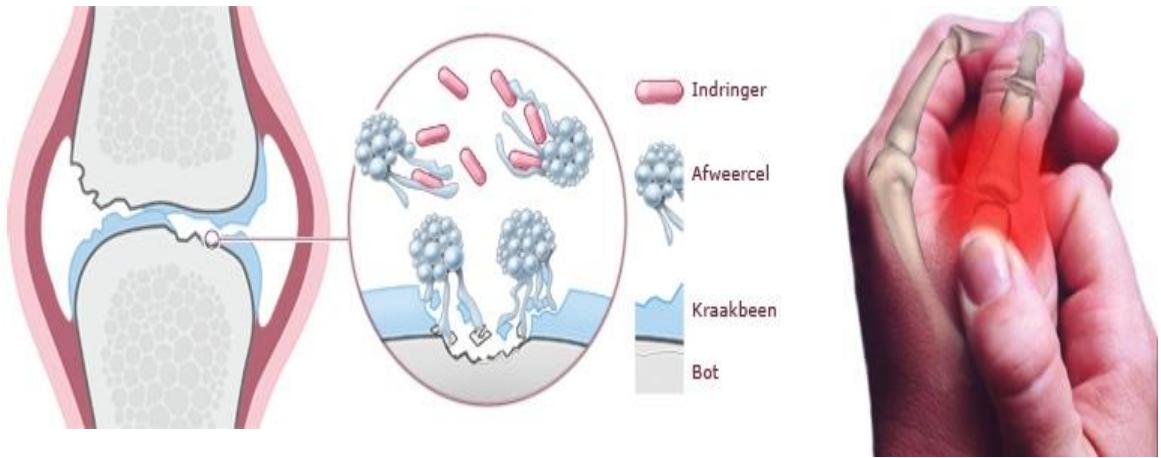


**Click Here for more Information!**



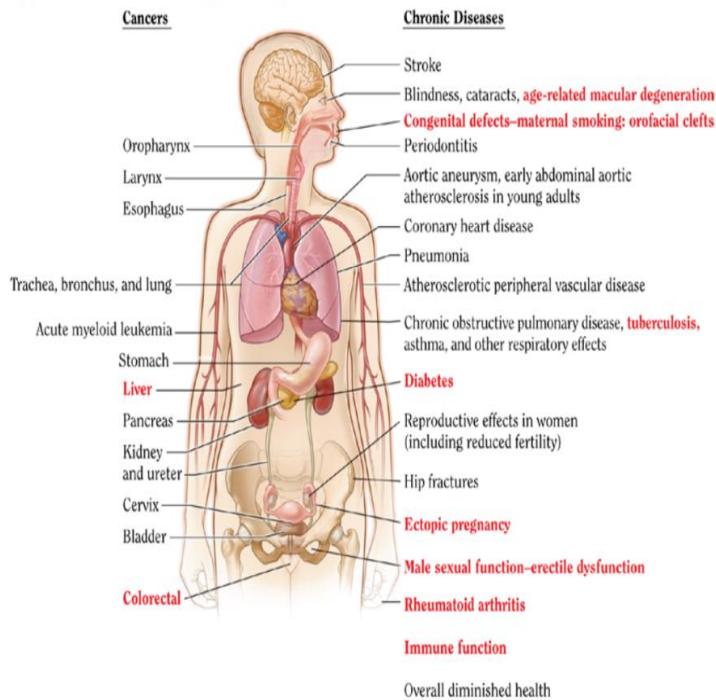
## Ulcerative Colitis





# Reumafonds

Figuur S.1 Roken tast vrijwel elk orgaan in het lichaam aan



Bron: Surgeon General 2014

Toelichting: Weergegeven zijn de ziekten die worden veroorzaakt of verergerd door roken. In **rode letters** zijn de ziekten aangegeven waarvan recent is ontdekt dat roken deze ziekten veroorzaakt of vererget



## Roken en RA

- Rokers hebben meer kans op RA
- Rokers hebben meer kans op infectie en parodontitis
- Rokers ontwikkelen bepaalde antistoffen :  
→ Anti-CCP

Preventie RA : zo iemand in familie RA heeft =  
**ROOKSTOP !!!**

# Andere omgevingsfactoren

- Silica/siliconen
- Zware metalen
- Geneesmiddelen
- Drugs



# Silicone implant incompatibility syndrome (SIIS): oorzaak van ASIA



# Case Report

- 29 jarige jonge vrouw
- Sinds 6 maanden erg moe
- Pijnlijke, stijve gewrichten
- Slaapt slecht
- Sinds 2 maanden rode ontstoken ogen

# Case Report (II)

- Fenomeen van Raynaud sinds 3 jaar
- Laatste maanden droge ogen,  
ook droge mond
- 10 jaar geleden: borst implantaten  
(cosmetisch)



# Case report III

Slanke jonge dame (model)

- Moe; RR 110/70; pols 88;
- Rode ogen
- Hart/longen/  
buik geen afwijkingen
- Trigger points +++  
geen arthritis

**ACTIE ?**

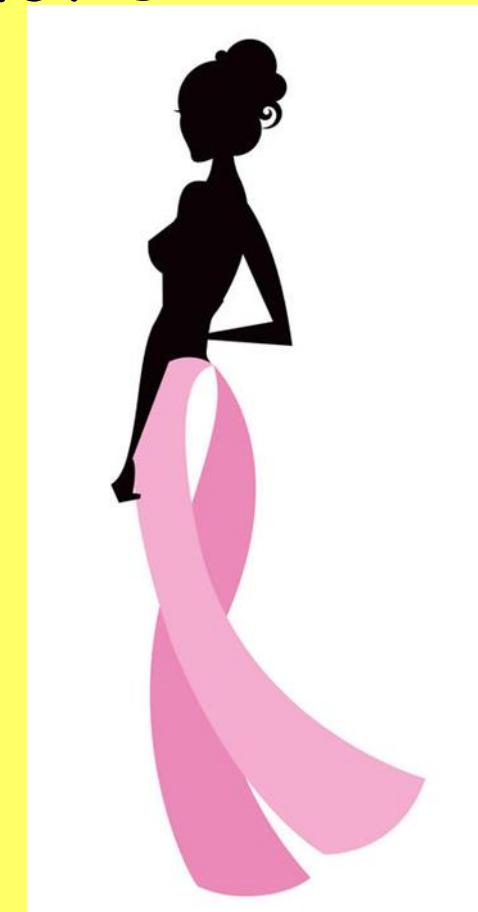




# Case Report

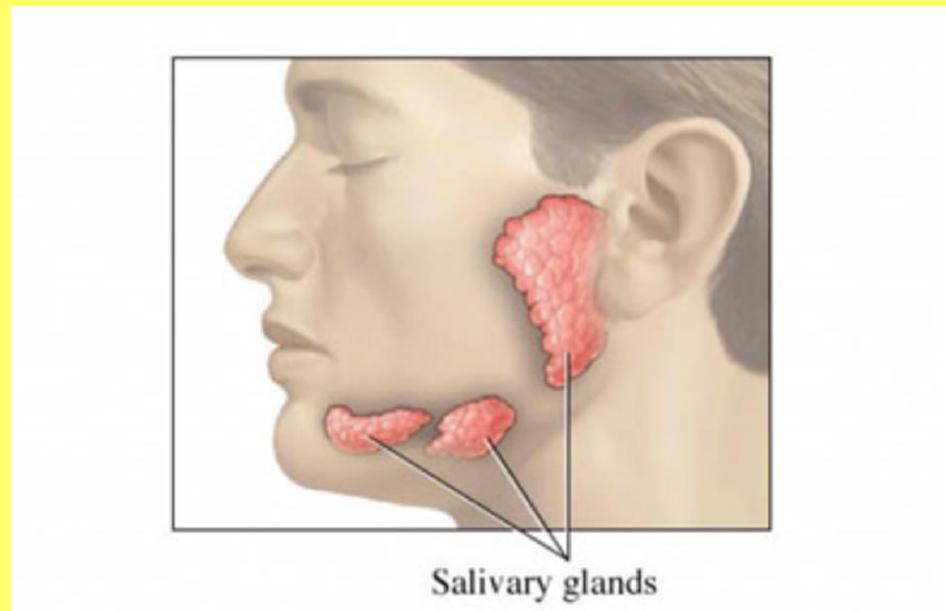
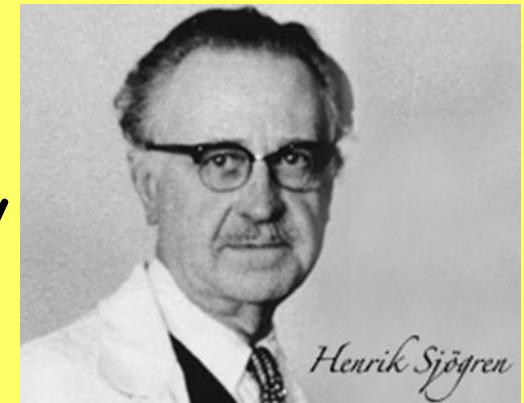


- Shirmer test: geen traanproductie  
(<5 mm in 5 min)
- Oogarts:  
keratoconjunctivitis sicca
- Laboratory tests:  
antistoffen: ANA, SSA/SSB

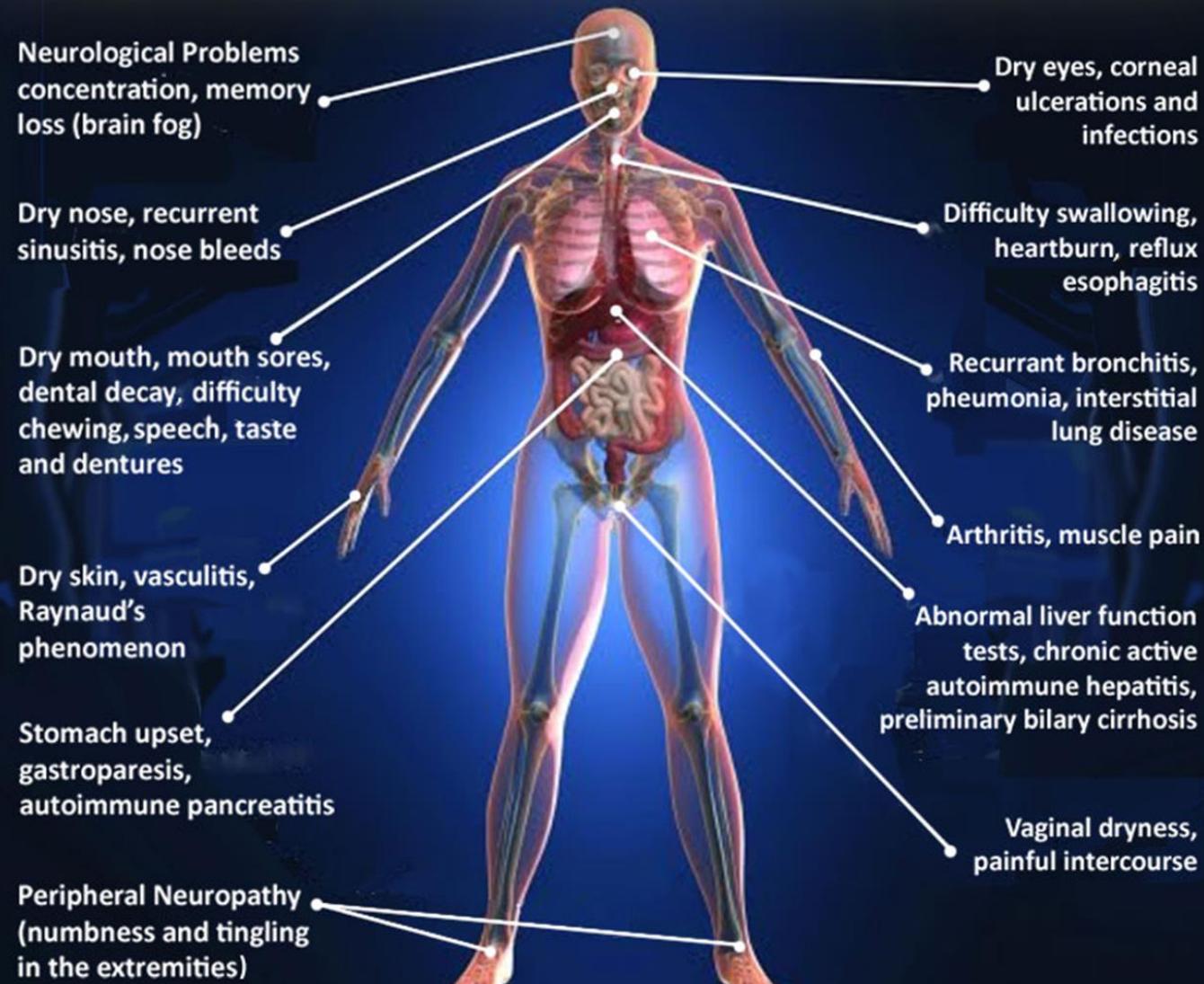




## Minor salivary gland biopsy



# Ways Sjögren's Syndrome may Affect the Body



## Venus with Sjogren's - with thanks to Botticelli

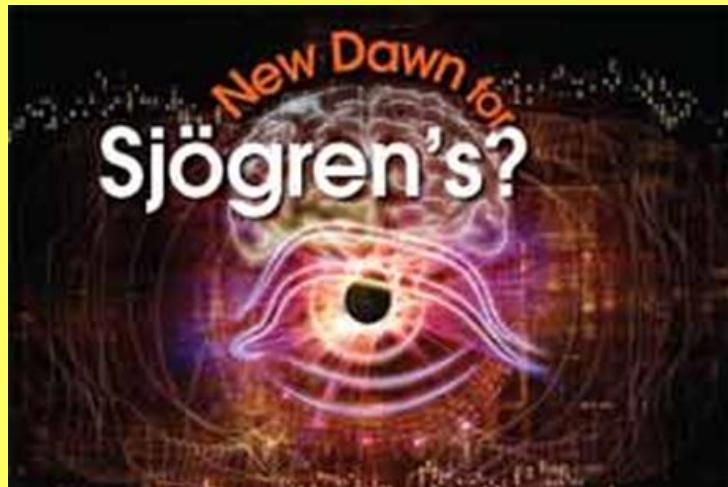




Between 400,000 and 3.1 million adults have Sjögren's Syndrome



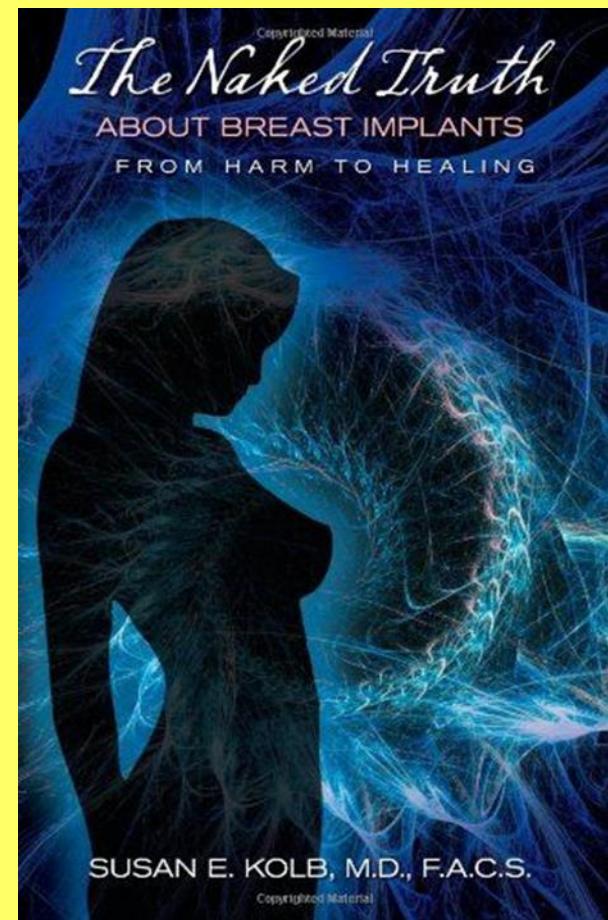
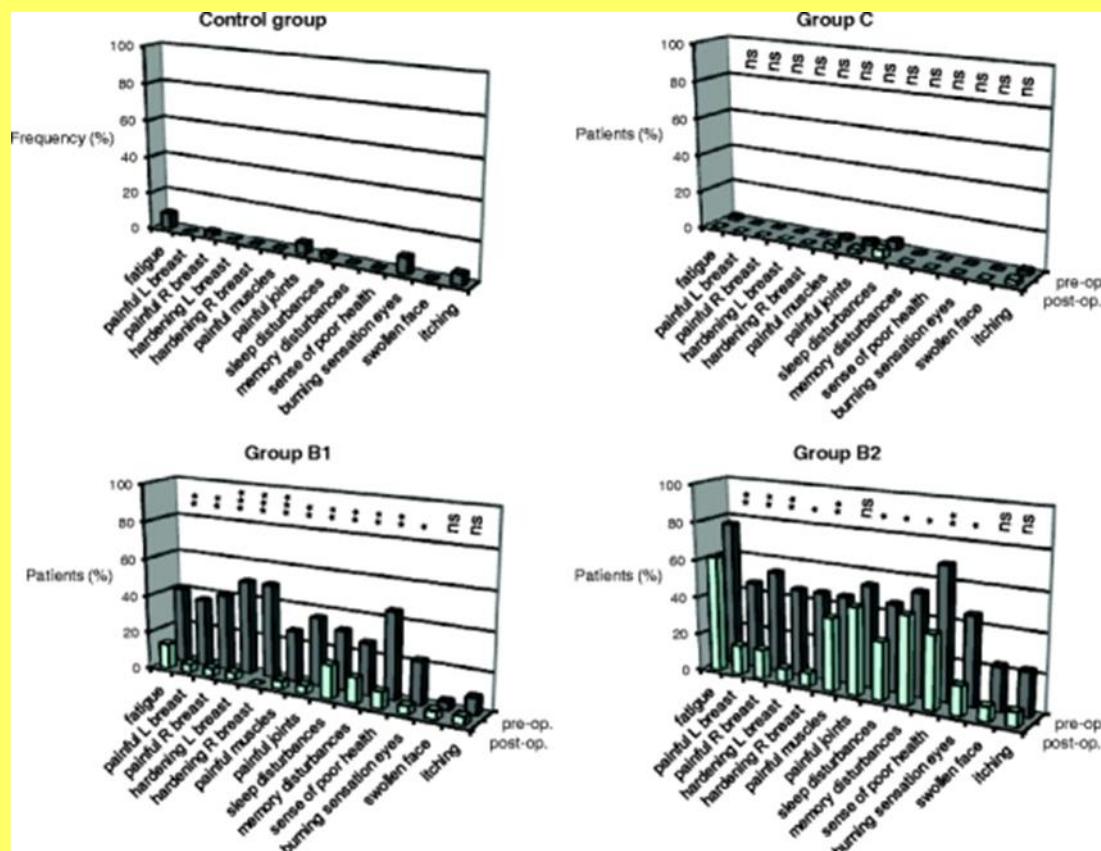
Prevalentie Sjogren: 0.1 - 4.8 %  
Female : male = 9 : 1



# Case report

Kappel et al. Eur J Plast Surg 2012  
Cohen Tervaert et al. Immunol Res 2013  
De Boer et al Immunol Res 2016

## Siliconen-borstimplantaten verwijderd



# Case report

- Herboren !
- Voelt zich veel beter
- Wenst zwangerschap



# Conclusion

Autoimmuun ziekten:

- Komen vaak voor
- Geassocieerd met omgevingsfactoren (infecties, voedsel, roken, silica, UV, drugs, implantaten)

# Conclusion



More research needed !