

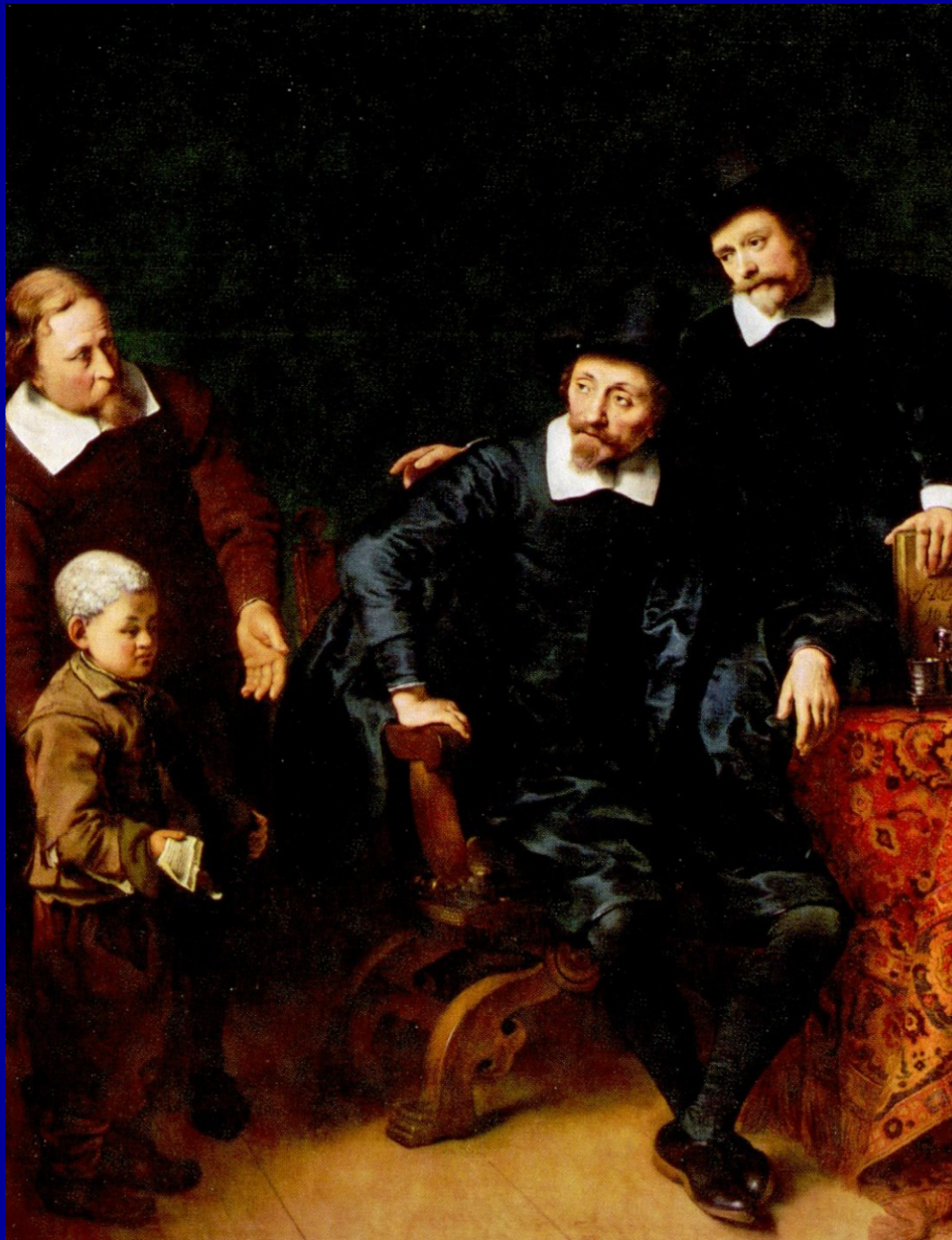
Psoriasis

Vladimír Vašků

I. dermatovenerologická klinika

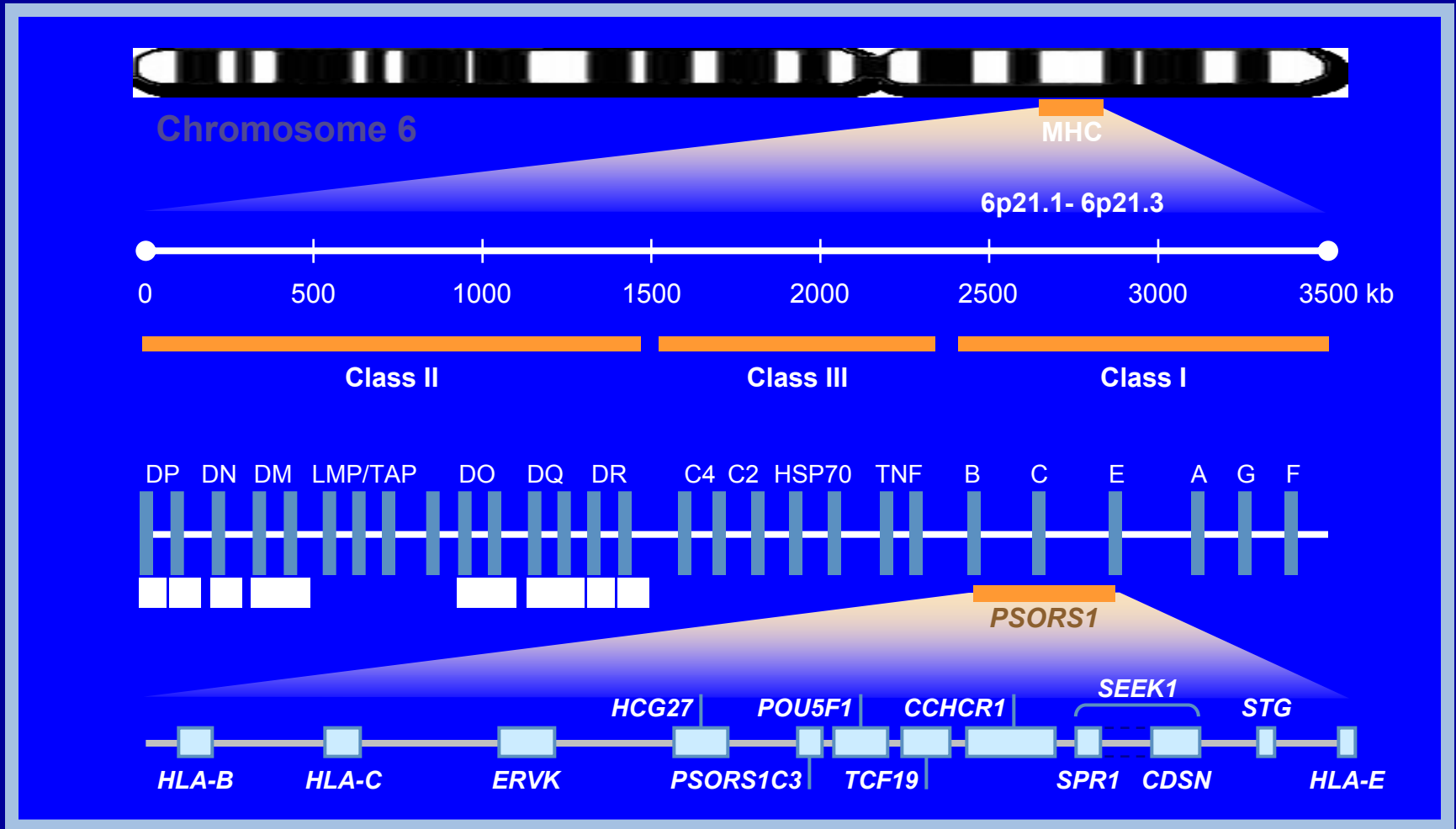
LF MU a FN u sv. Anny v Brně

Czech Republic

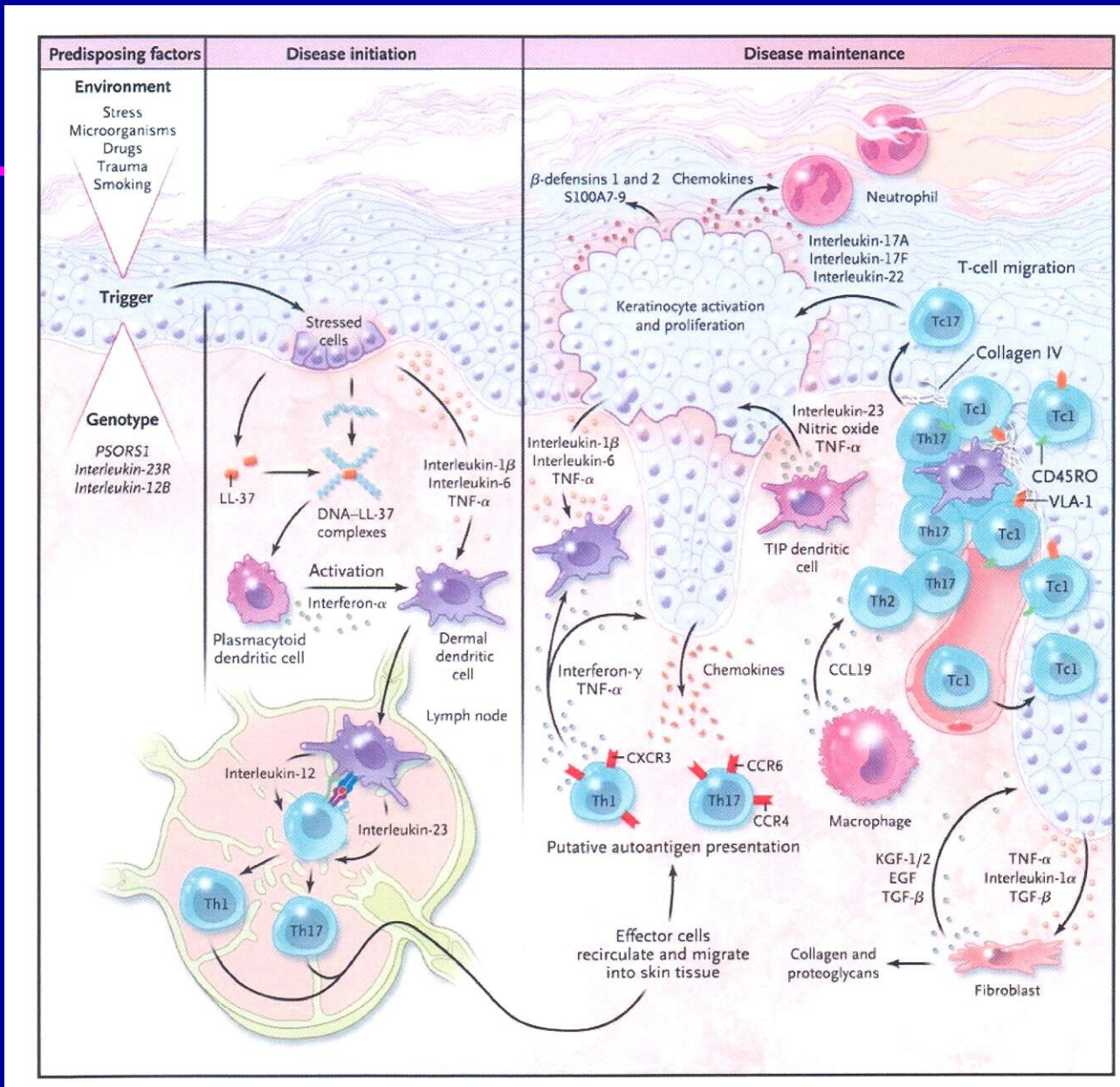


PSORS1

Illustration adapted from Browne AM, Kere G. Nat Rev Immunol. 2005;5(9):699-711.



1. Trembath RC, et al. Hum Mol Genet. 1997;6(5):813-20.



Psoriasis is a Complex Disease

Characteristics

Multigenic predisposition
(1% - 3% of Caucasian
population affected)

Inflammatory
disorder

Lifelong, chronic
relapsing disease

Various clinical
features

**Plaque-type psoriasis
most common form**

Palmoplantar¹



Plaque¹



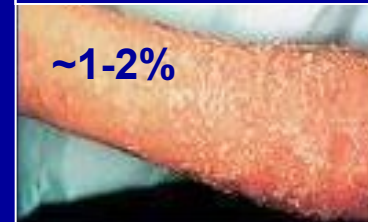
Joints (PsA)²



Erythrodermic¹



Pustular¹



Guttate¹



Inverse Psoriasis¹



Nail psoriasis³



¹García-Diez A et al. *Dermatology*. 2008;216(2):137-151.

²Wilson FC et al. *Arthritis Rheum*. 2009;61:233-239.

³Griffiths CE et al. *Br J Dermatol*. 2007;156(2):258-262.

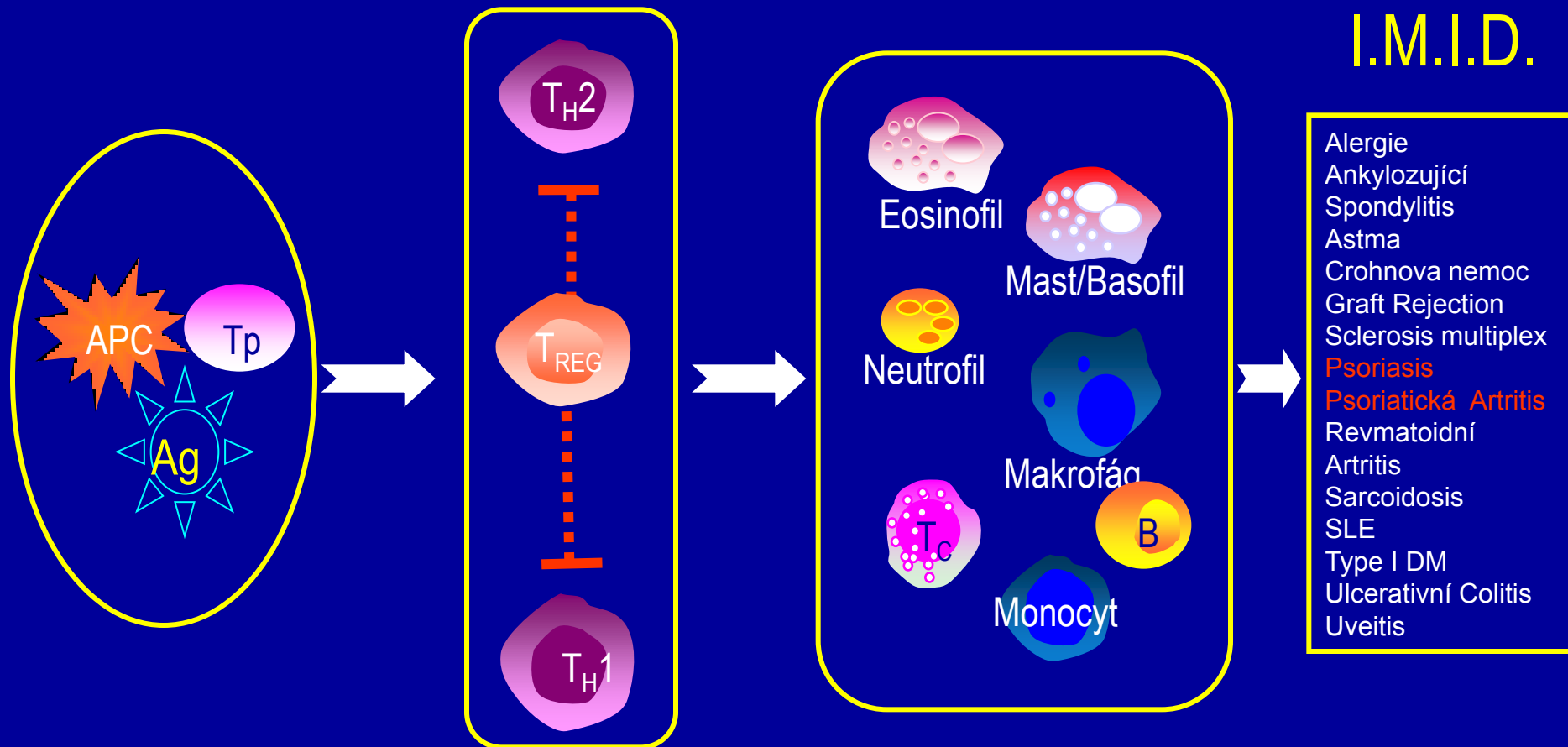
Imunobiologie IMID („immune mediated inflammatory diseases“)

Senzitizace

Vývoj patogenních T-buněk
Nerovnováha efektor/ supresor

Místní zánět

Tkáňové poškození
Fibróza



Psoriasis Demography Czech Republic

Severity	%	Prevalence 2%
mild to moderate	75	153000
moderate to severe	25	51000
severe	15	30600

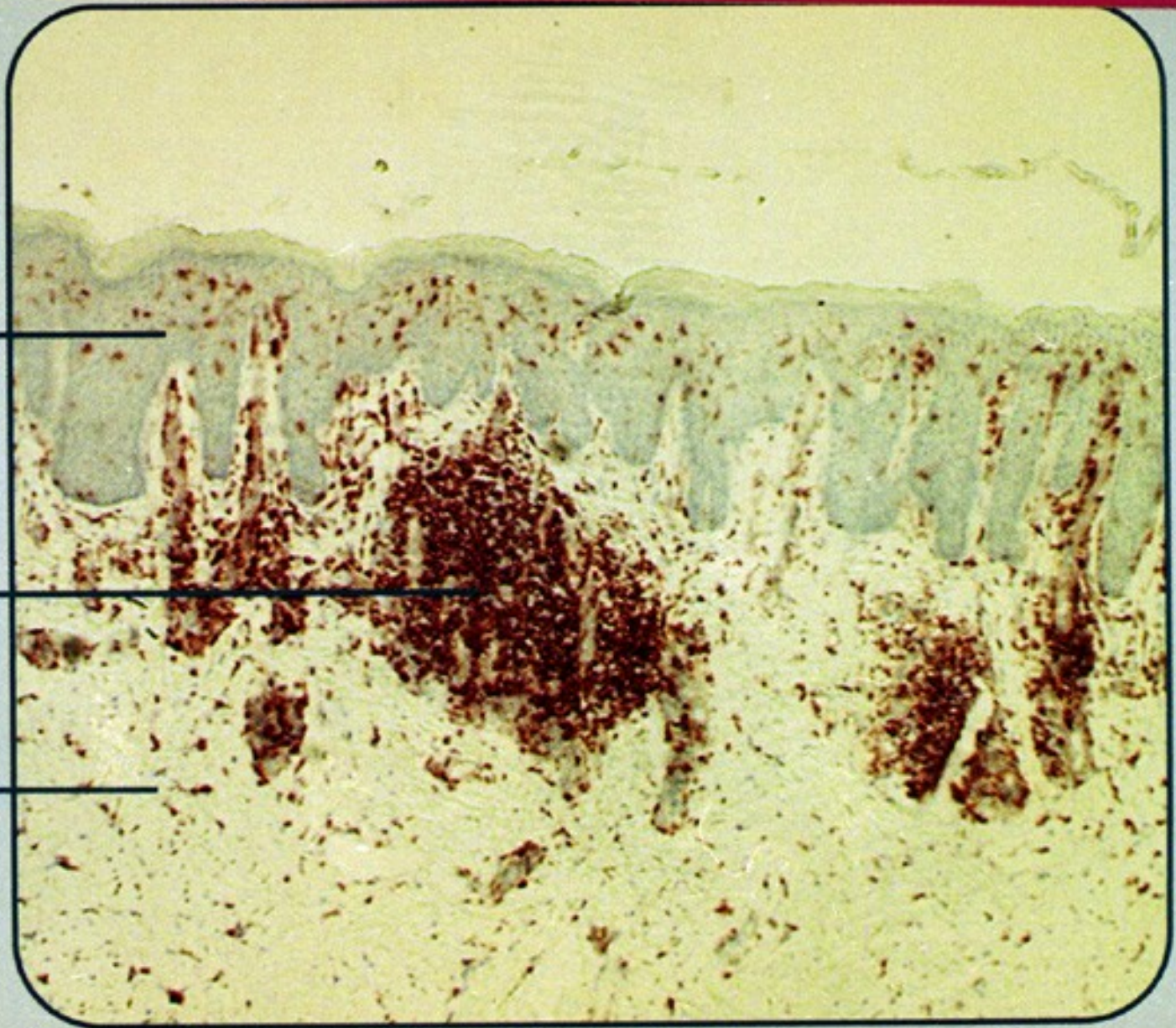
Epidermis

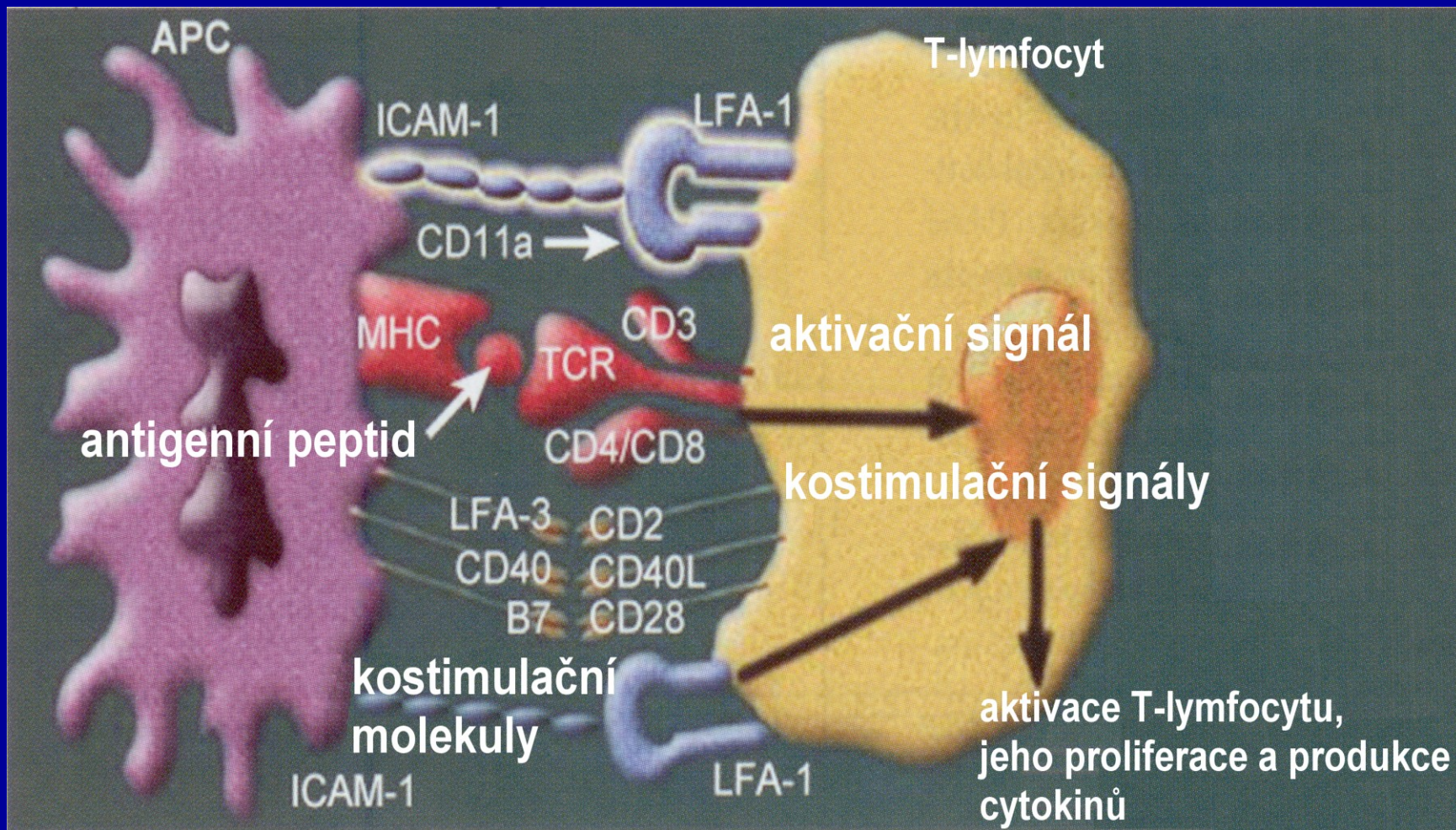


CD4+ T cell



Dermis

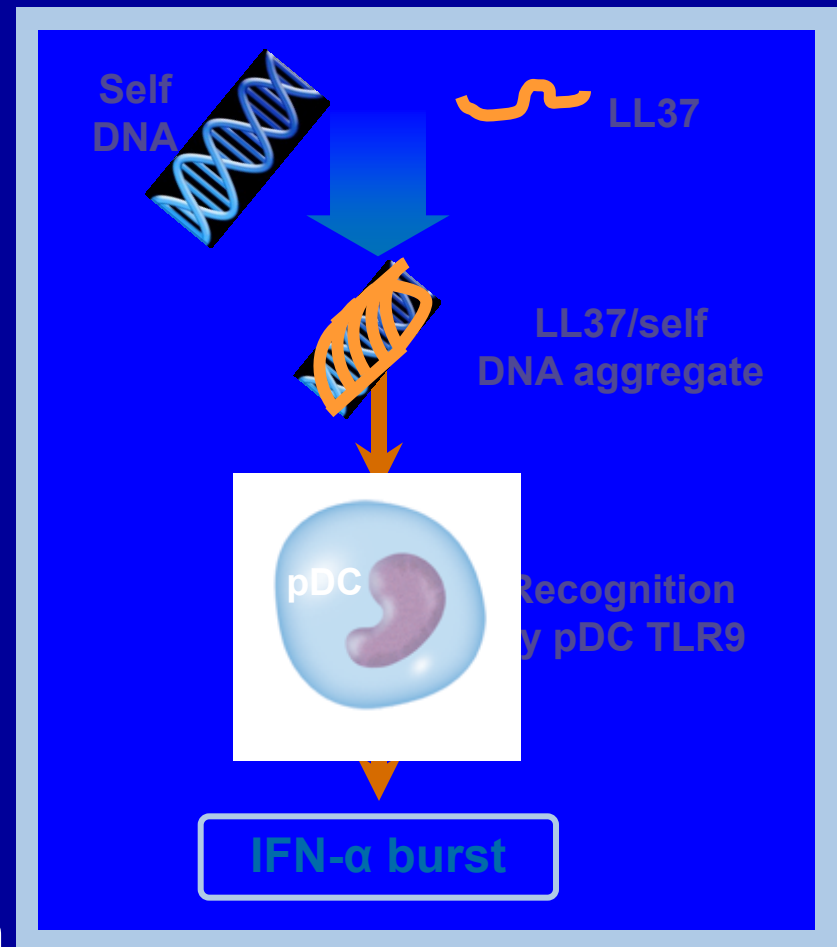




Podle Gottliebové, 2004

Plasmacytoid Dendritic Cell Activation and Initiate Psoriasis ¹

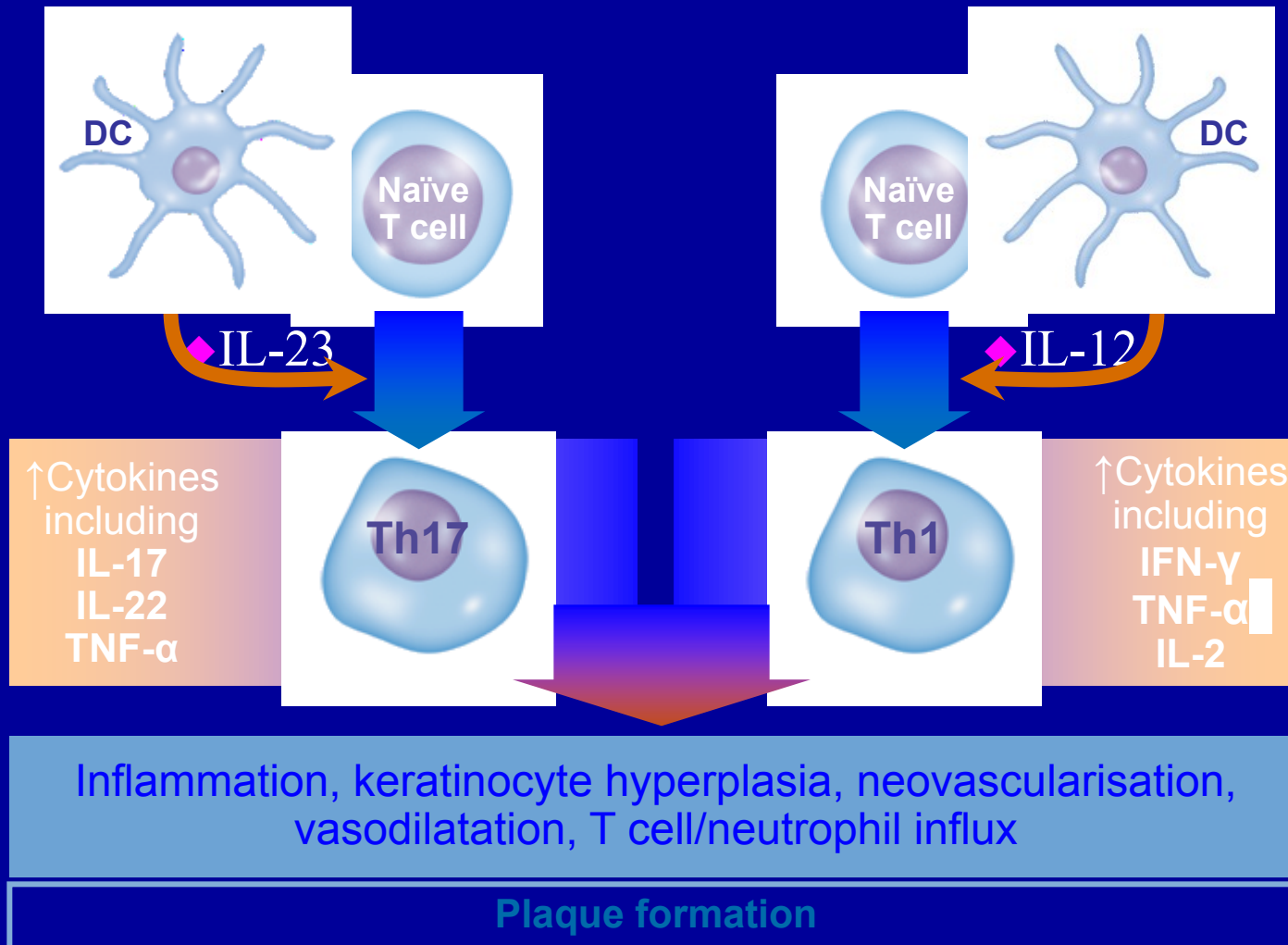
- pDCs use Toll-like receptor (TLR)7 and TLR9 to recognise viral/microbial nucleic acids in endosomal compartments
- The antimicrobial peptide LL37, a cathelicidin overexpressed in psoriatic skin, forms an



◆ 1. Lande R, et al. Nature. 2007; 449: 564-91

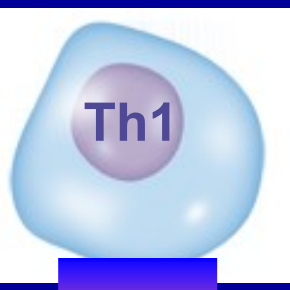
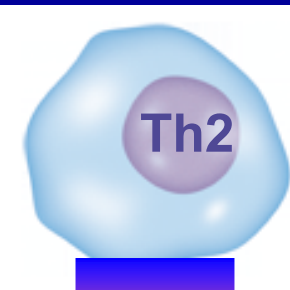




helper

Environment in Psoriasis^{1,2}



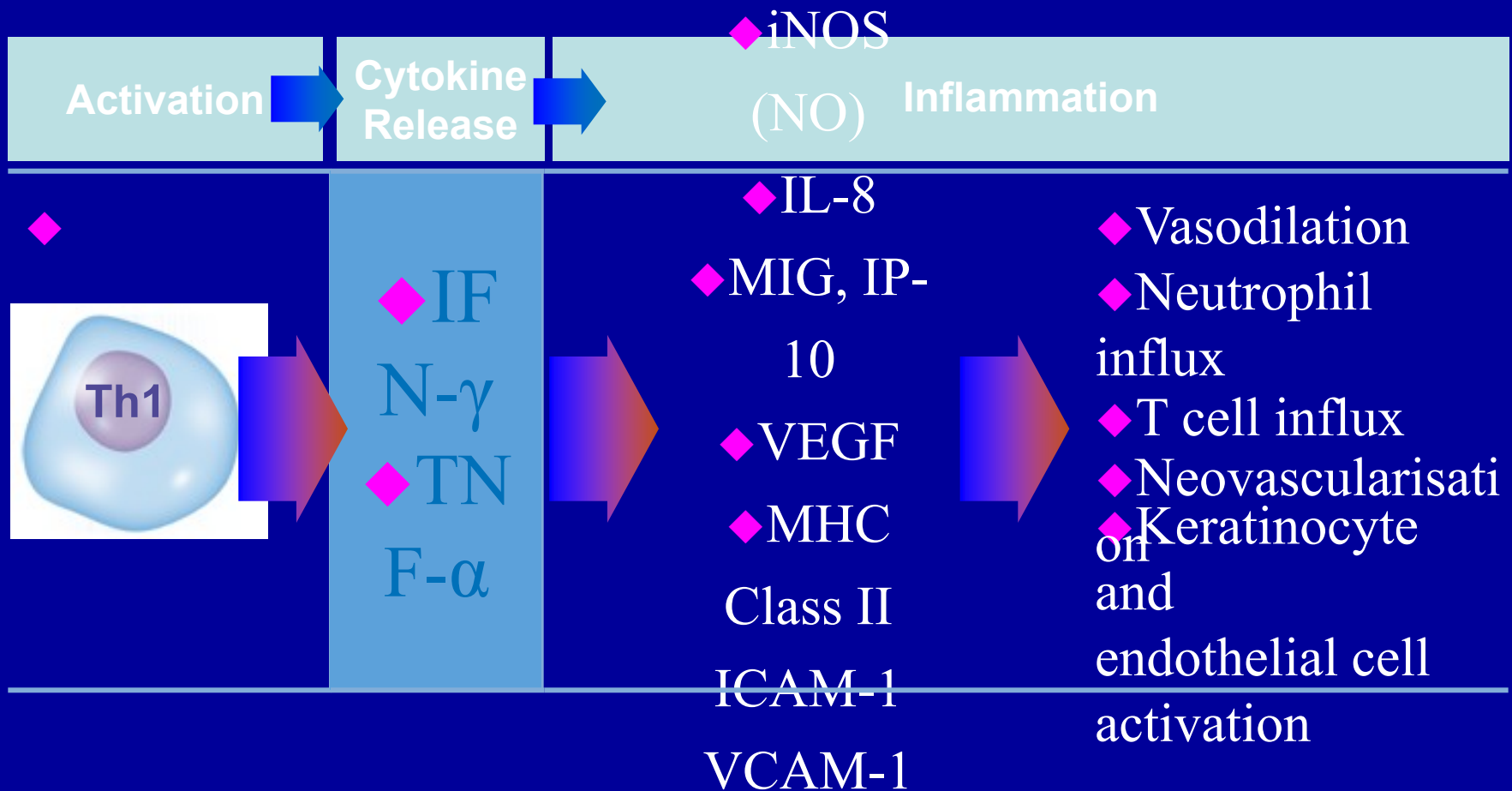
Plaques:

Th1 and Th17^{1,2}

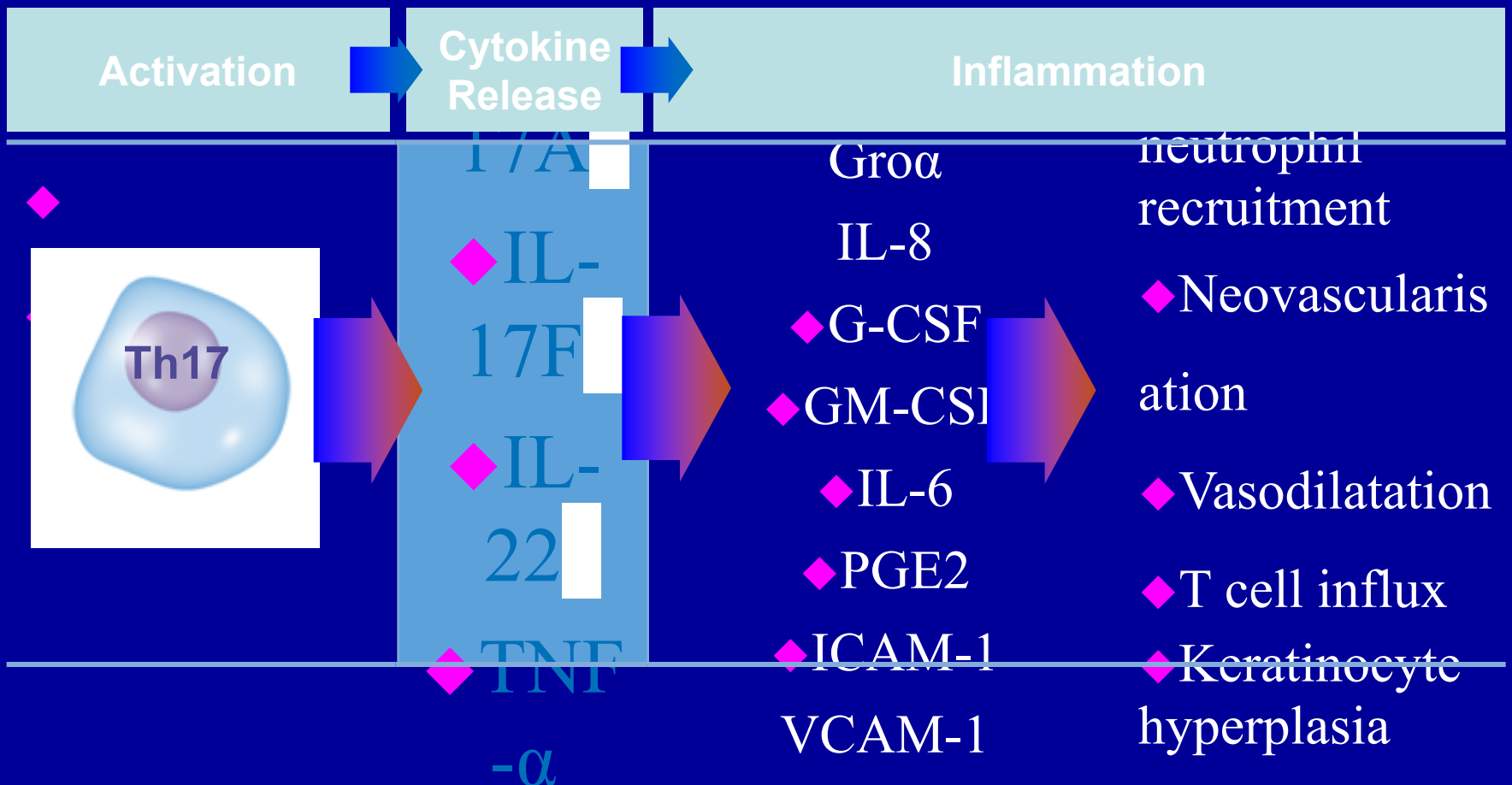
◆ Subset				
◆ Defining Cytokines ³⁻⁵	◆ IFN- 	◆ IL-4	◆ IL-17 ◆ IL-22	◆ IL-10 ◆ TGF- 
◆ Found in psoriatic plaque ⁶	◆ Yes	◆ No	◆ Yes	◆ Low level

- ◆ 1. Austin LM, et al. *J Invest Dermatol.* 1999;113:752-9. 2. Sabat R, et al. *Exp Dermatol.* 2007;16:779-98. 3. Janeway CA, et al. *Immunobiology.* 5th ed. New York: Garland; 2001. 4. Wilson NJ, et al. *Nat Immunol.* 2007;8(9):950-7. 5. Kagen MH, et al. *Ernst Schering Res Found Workshop.* 2006(56):193-209. 6. Lowes MA, et al. *J Invest Dermatol.* 2008. Epub 2008 Jan 17.

Inflammatory Processes in the Psoriatic Plaque

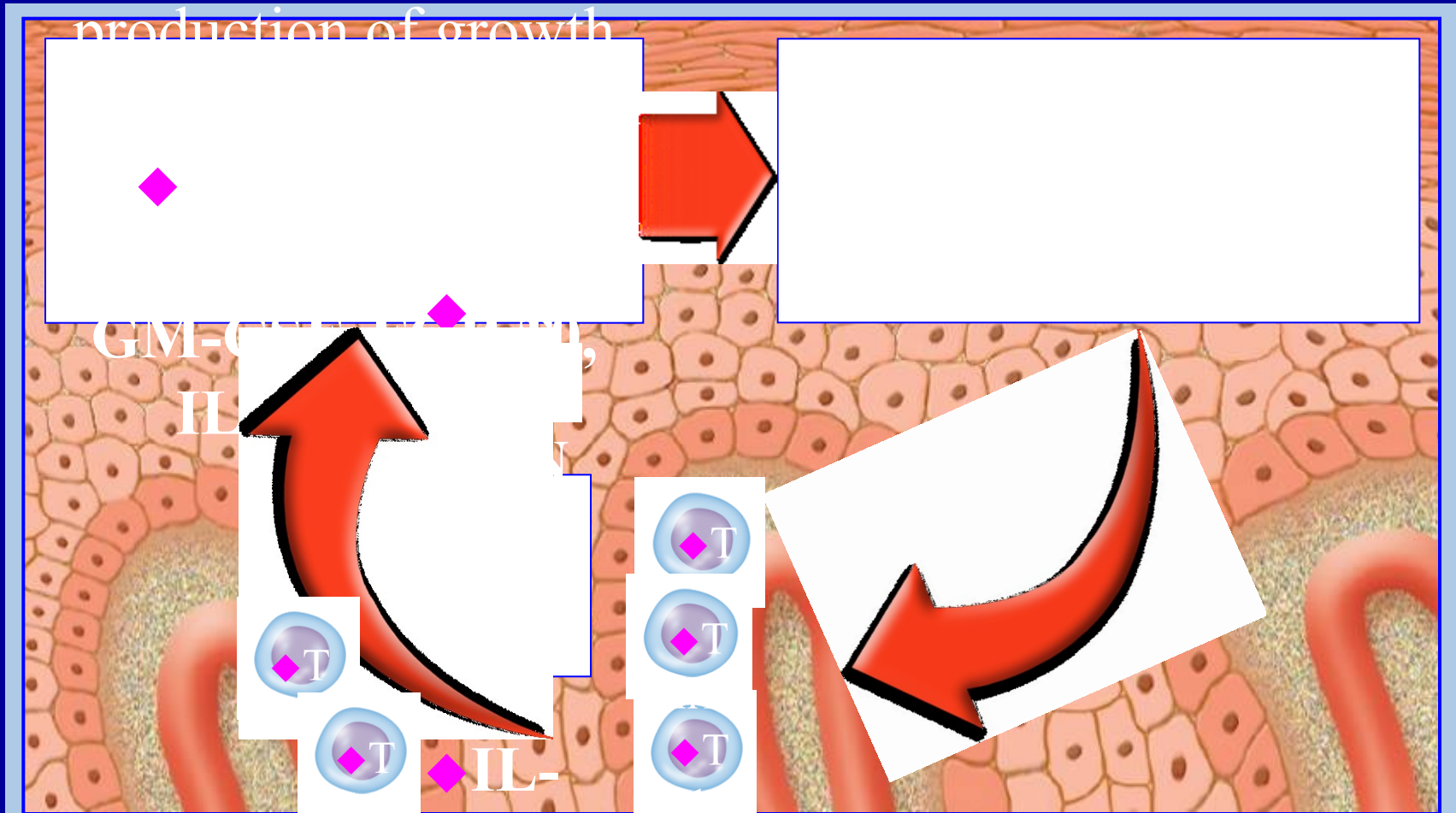


Inflammation and Keratinocyte Hyperplasia in Psoriatic Plaque



T-cell Cytokines Stimulate Keratinocyte Hyperplasia ^{1,2}

◆ Dysregulated KC



◆ 1. Albanesi C, et al. Clin Dermatol. 2007; 25:581-8. 2. Weinstein GD et al. J Invest Dermatol. 1985; 85:579-83.

and Epidermal Hyperplasia: the Vicious Cycle of Psoriasis

- Dendritic cells, lymphocytes, and keratinocytes interact in a "vicious cycle" to establish and perpetuate the inflammatory phenotype

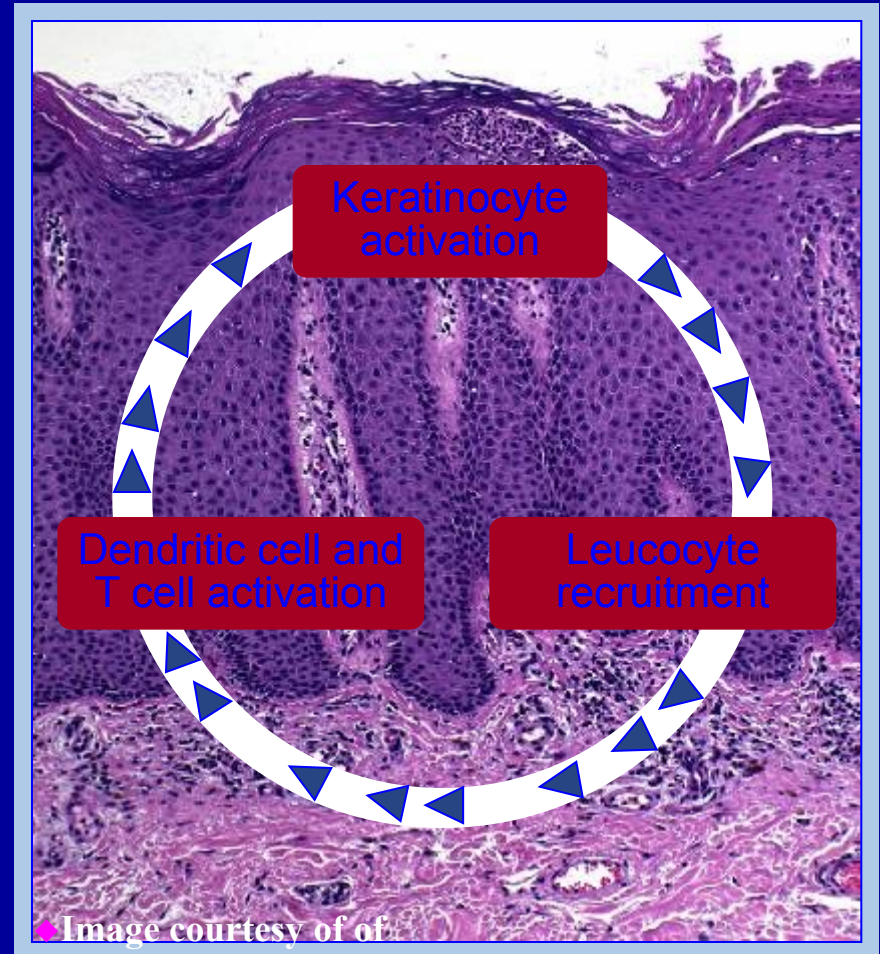
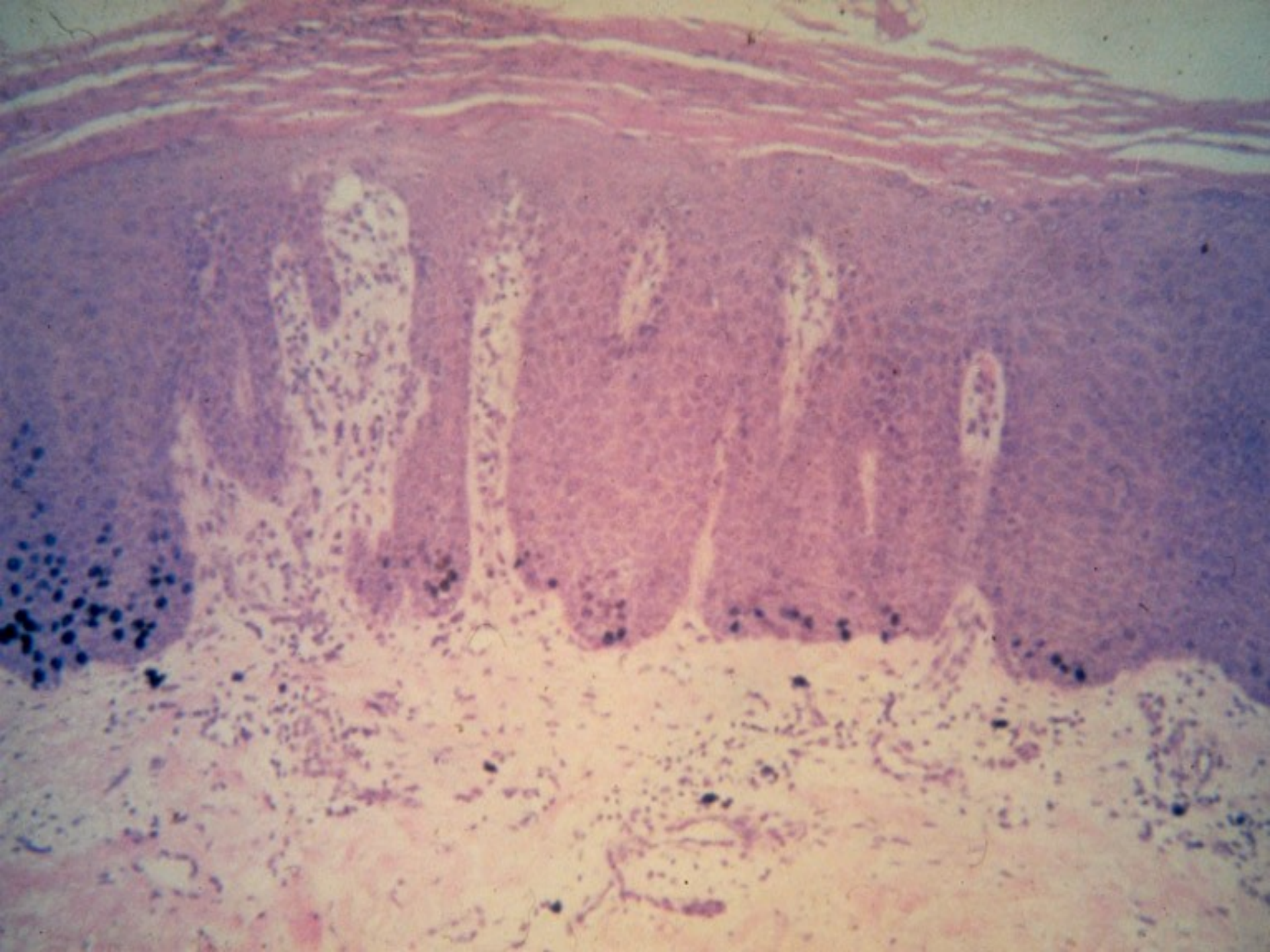


Image courtesy of

Professor J Prinz.





0274

10KV

X2,500

10µm

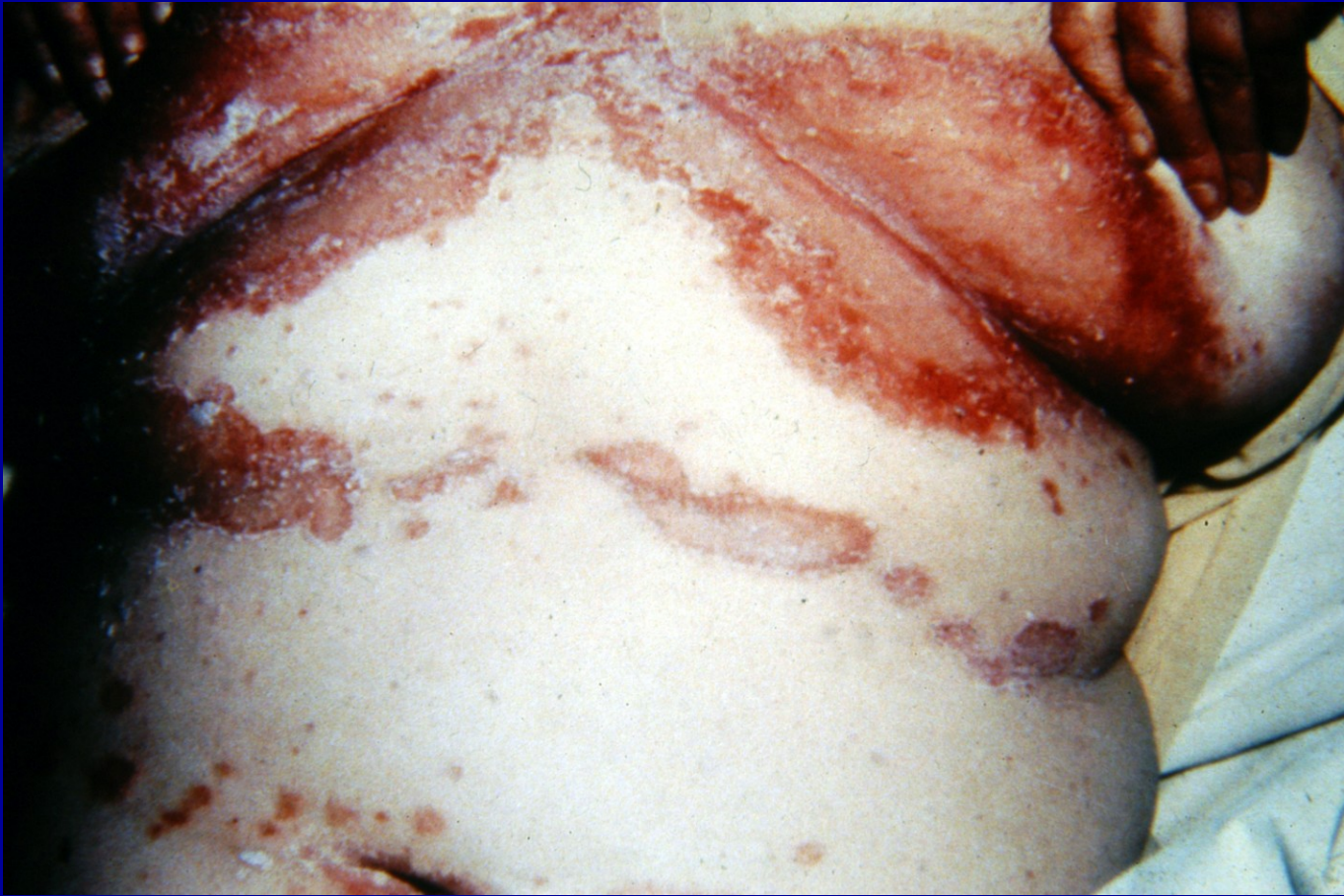
WD 9











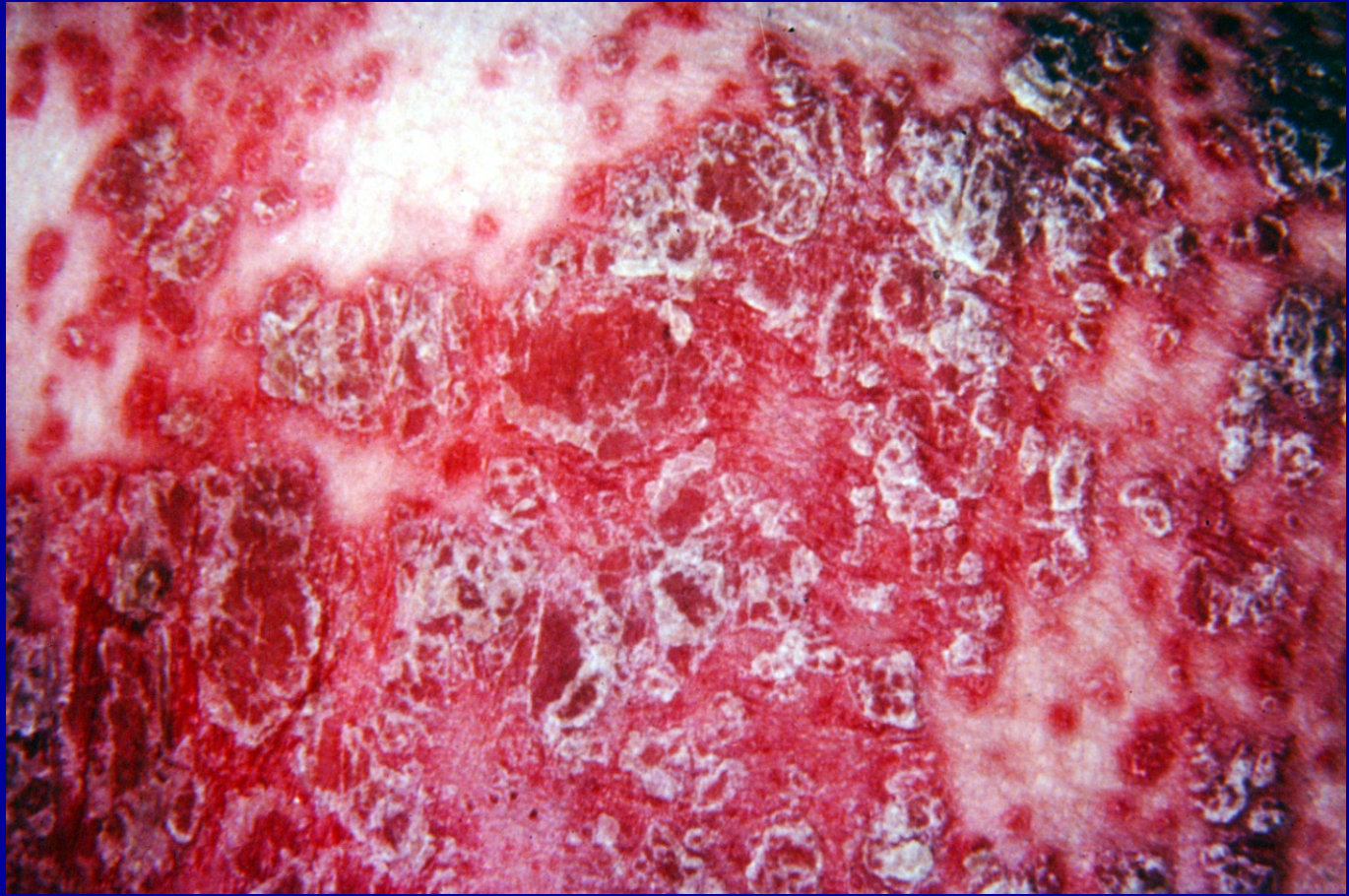






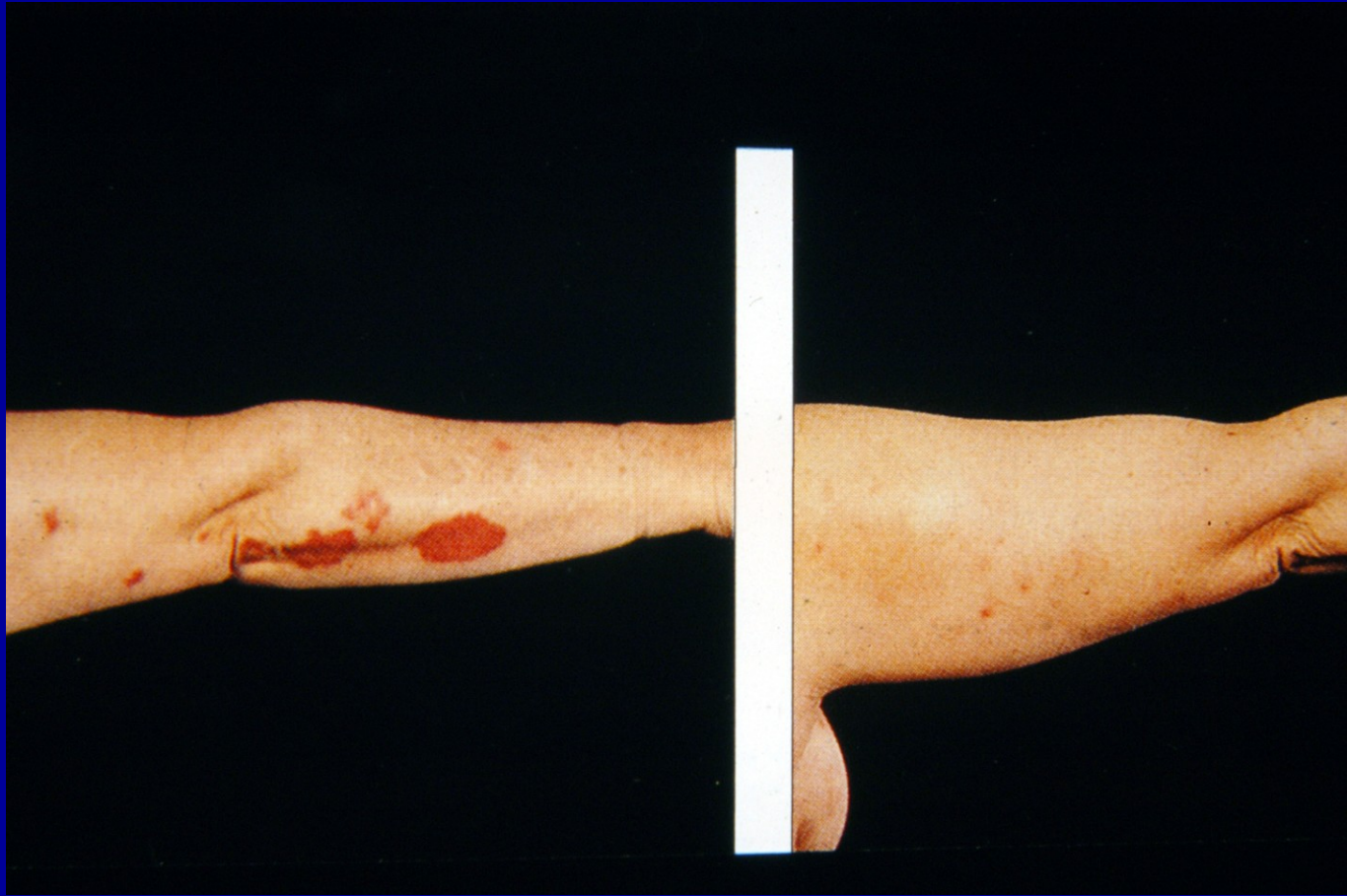




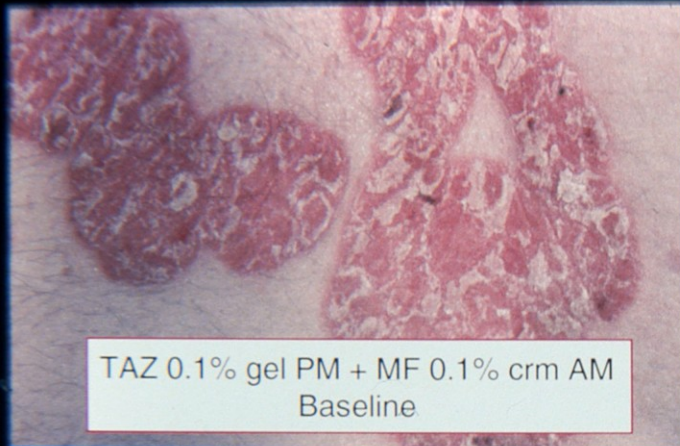








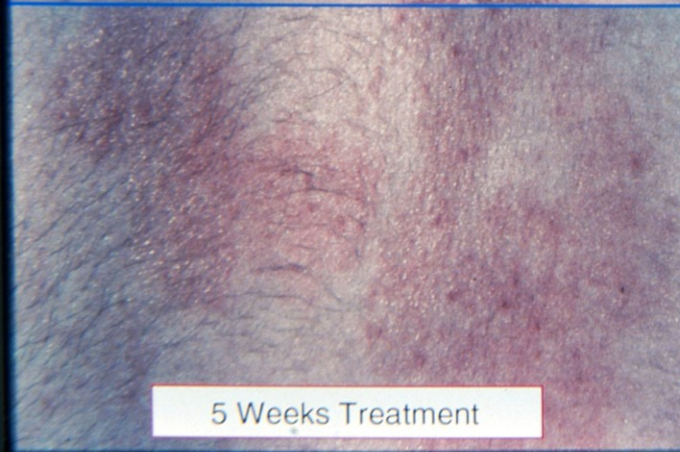




TAZ 0.1% gel PM + MF 0.1% crm AM
Baseline



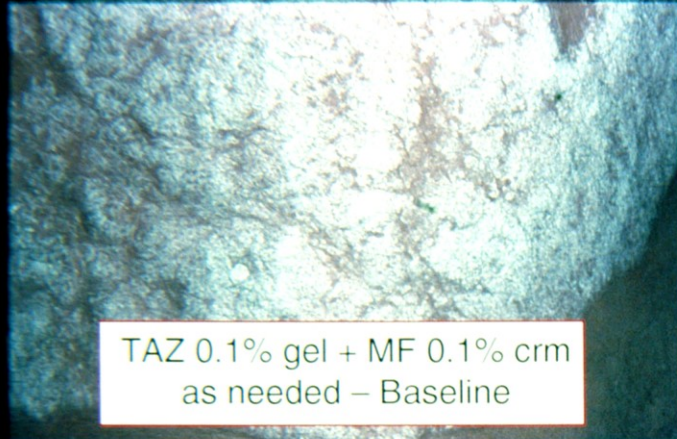
2 Weeks Treatment



5 Weeks Treatment



19 Weeks No Treatment



TAZ 0.1% gel + MF 0.1% crm
as needed – Baseline



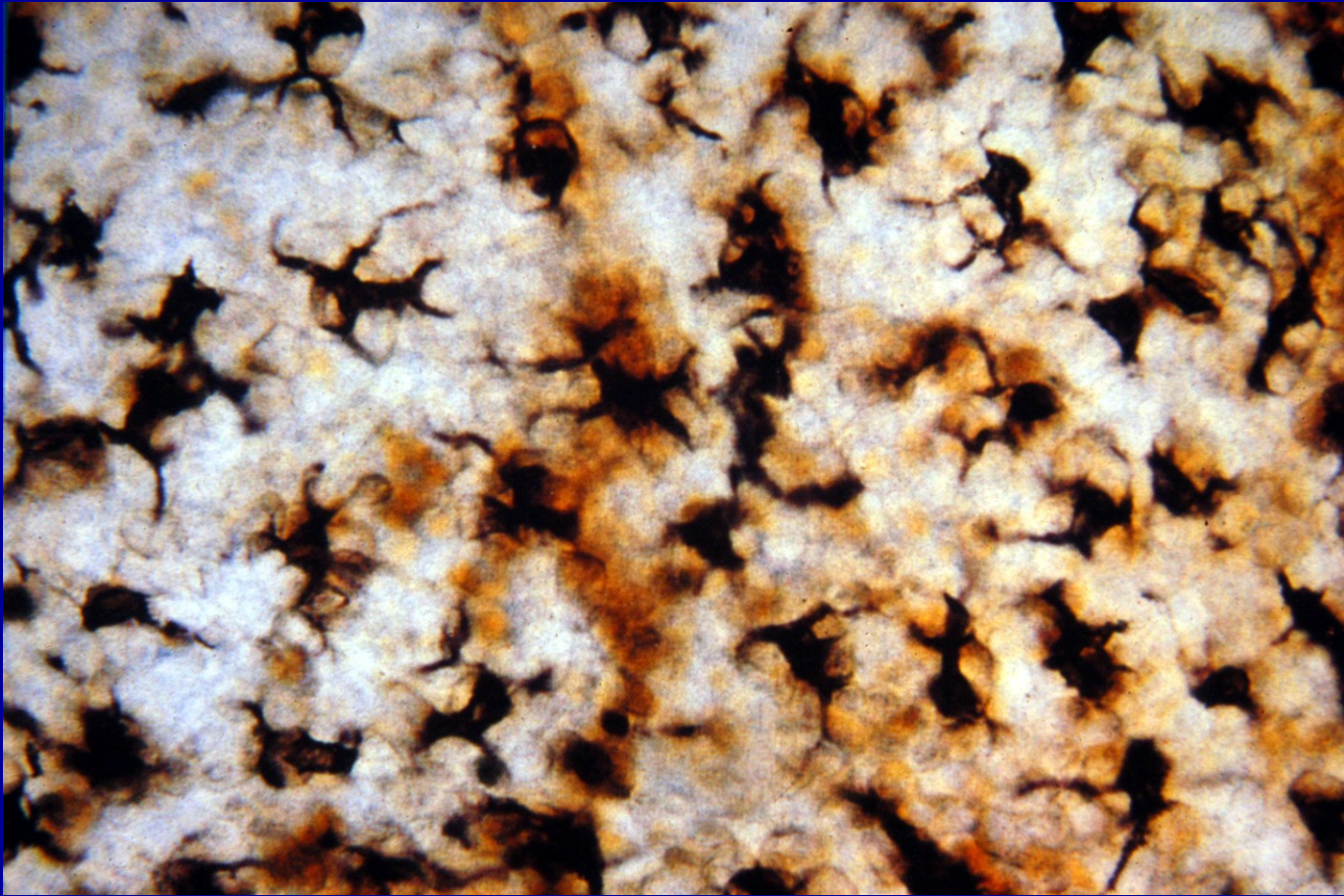
2 Weeks Treatment

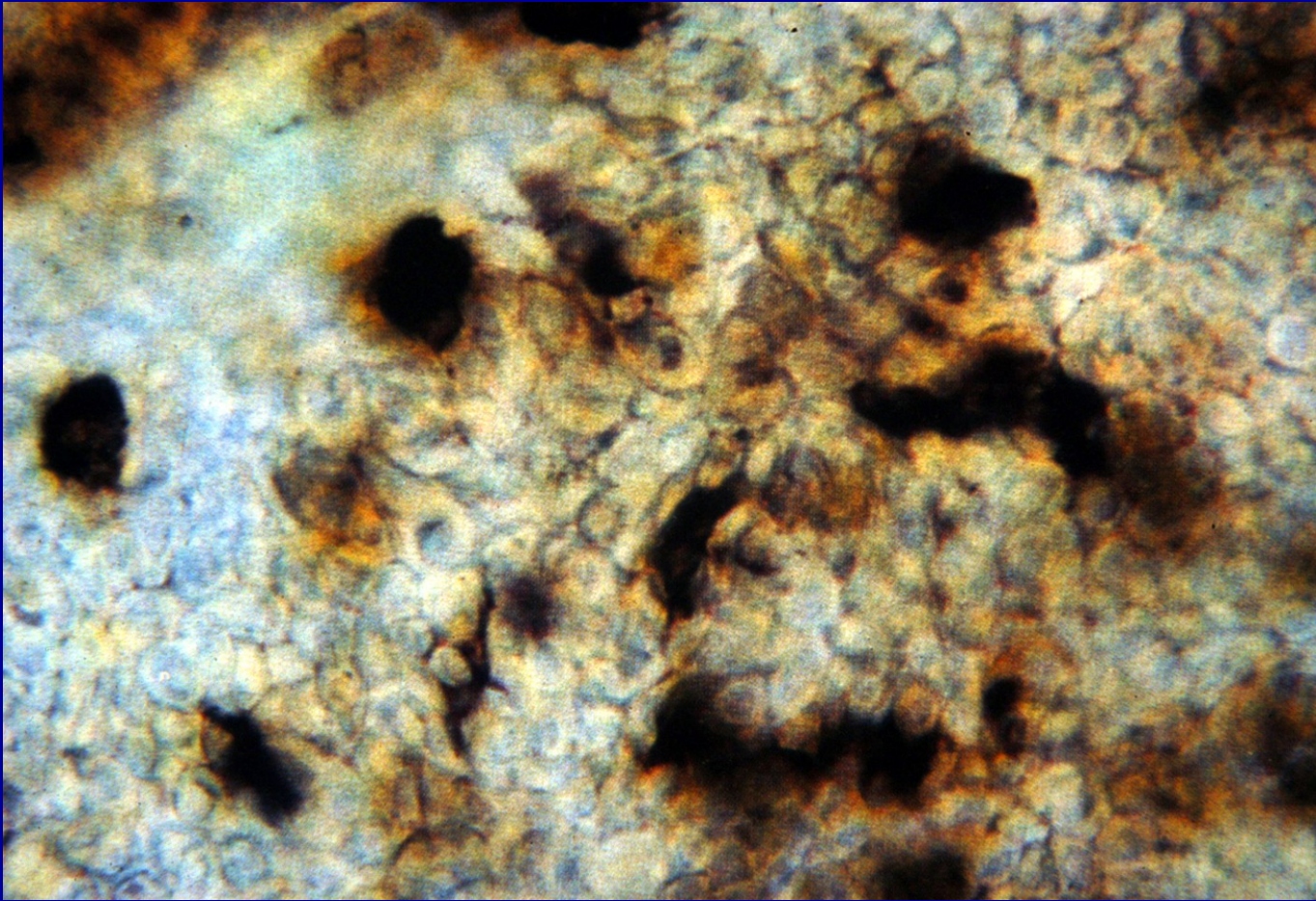


13 Weeks Treatment



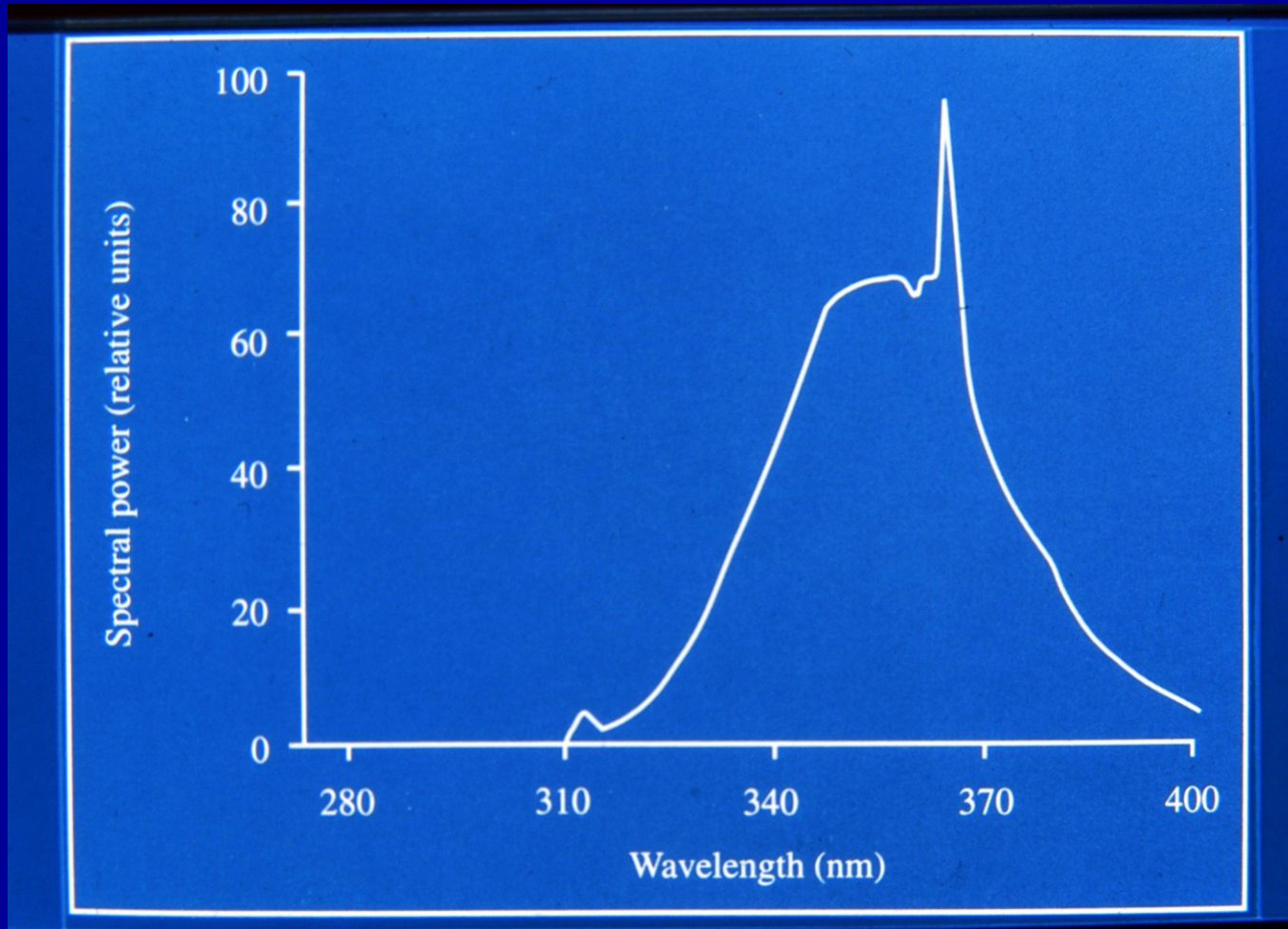
8 Weeks No Treatment



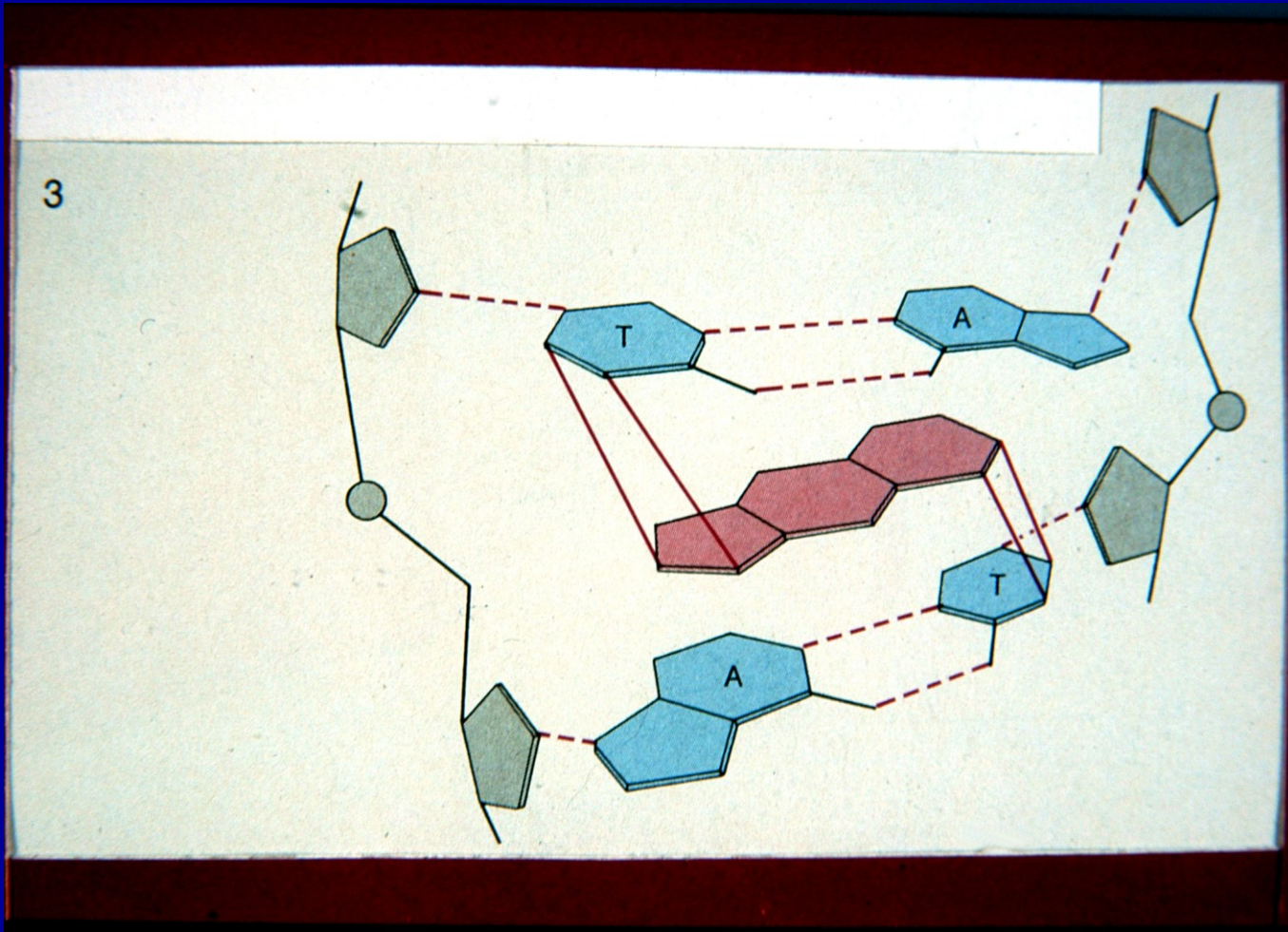




Fotochemoterapie - PUVA

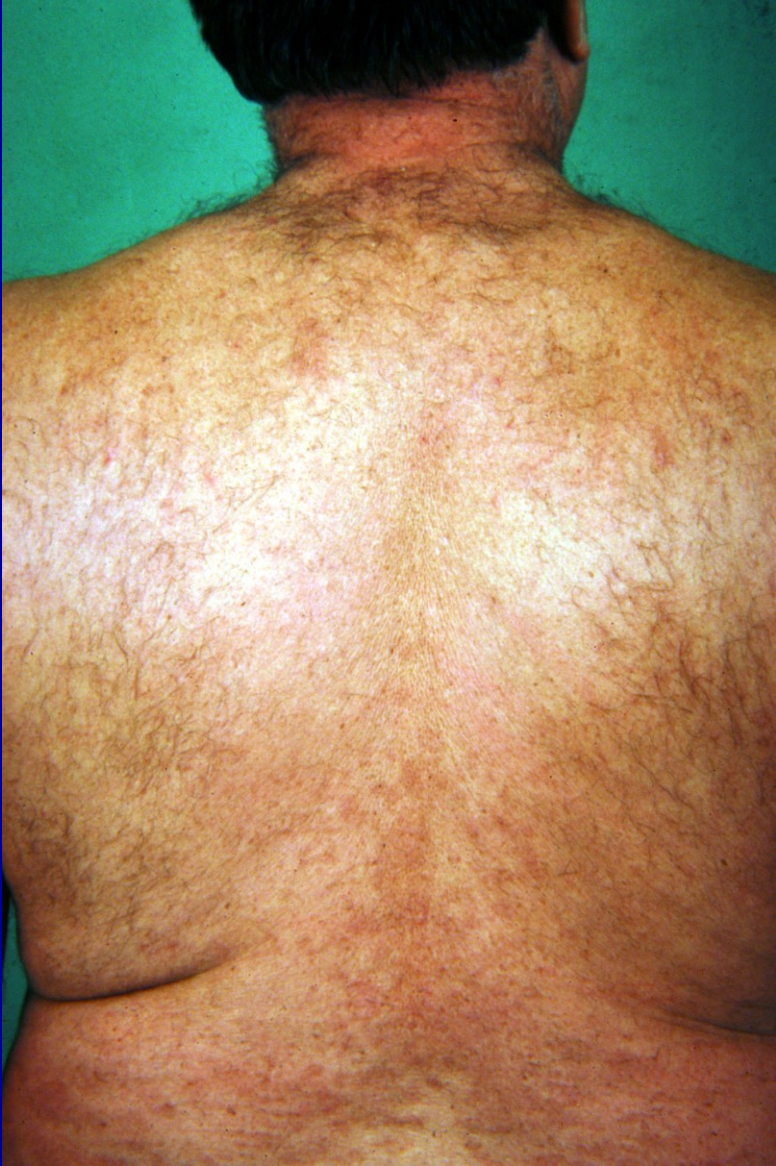


Fotochemoterapie - PUVA





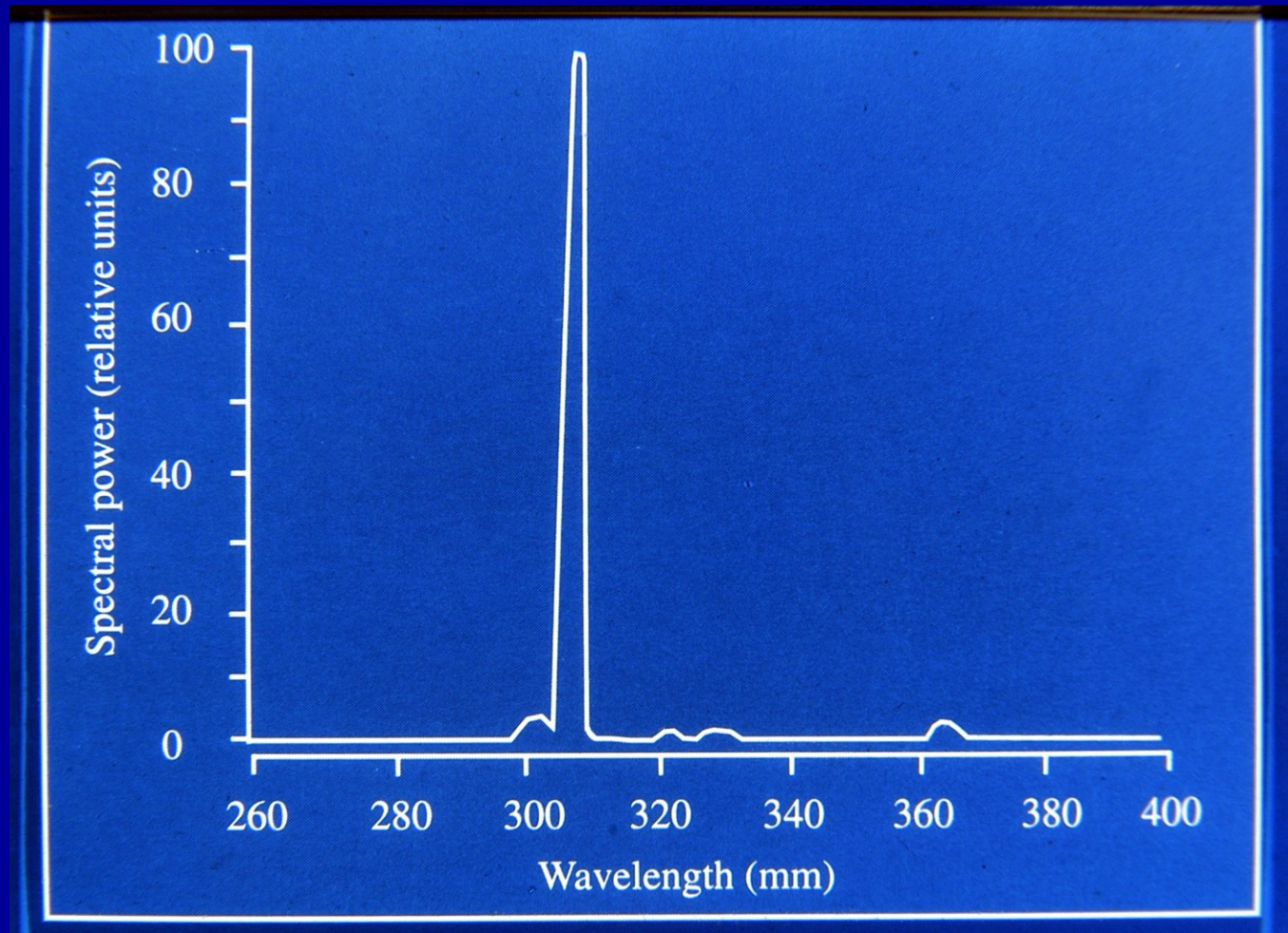






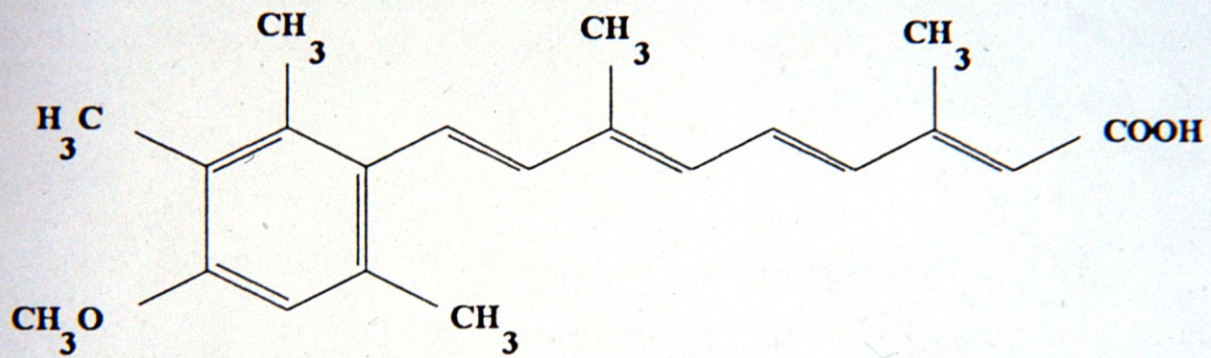


UVB – „Narrow band lamp“





















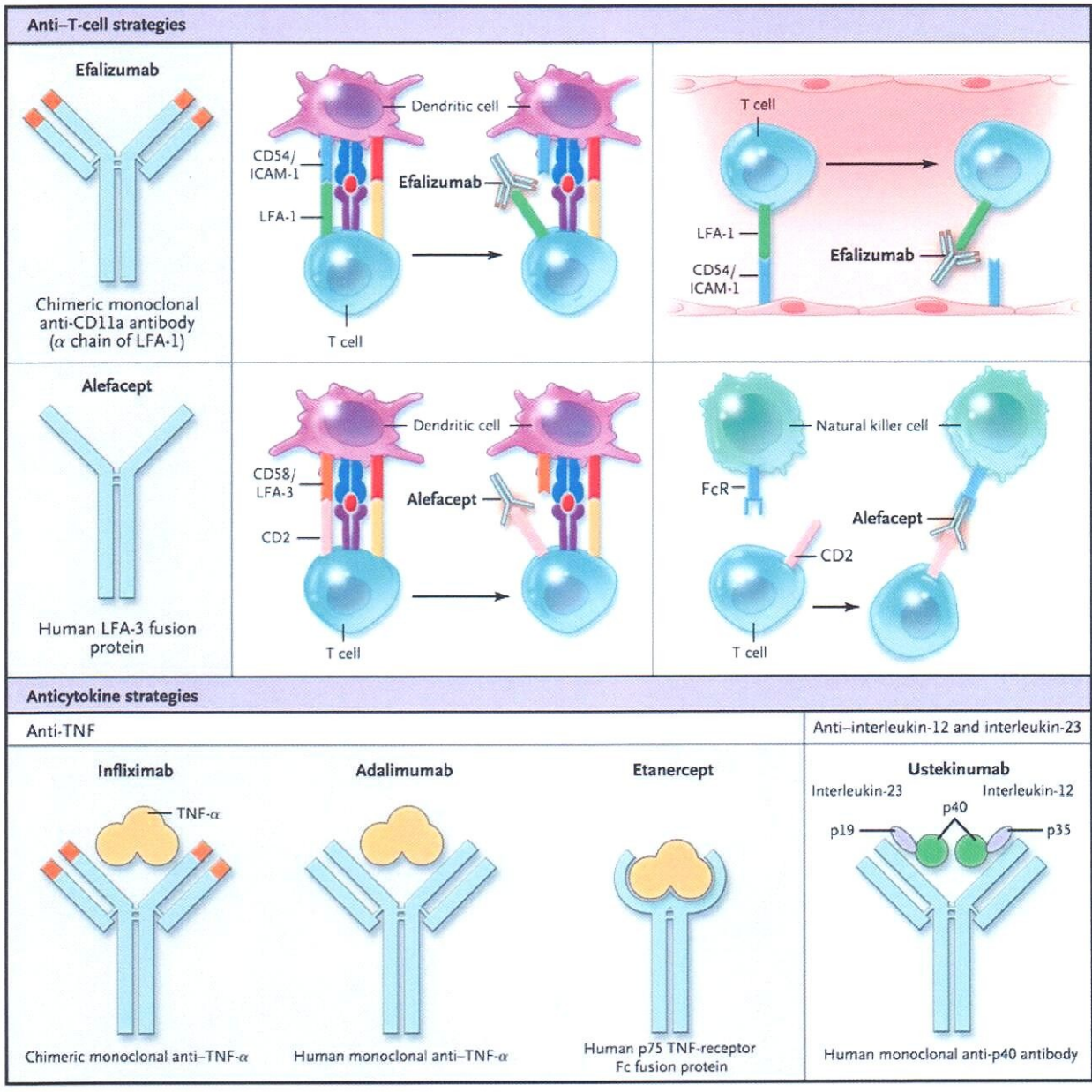




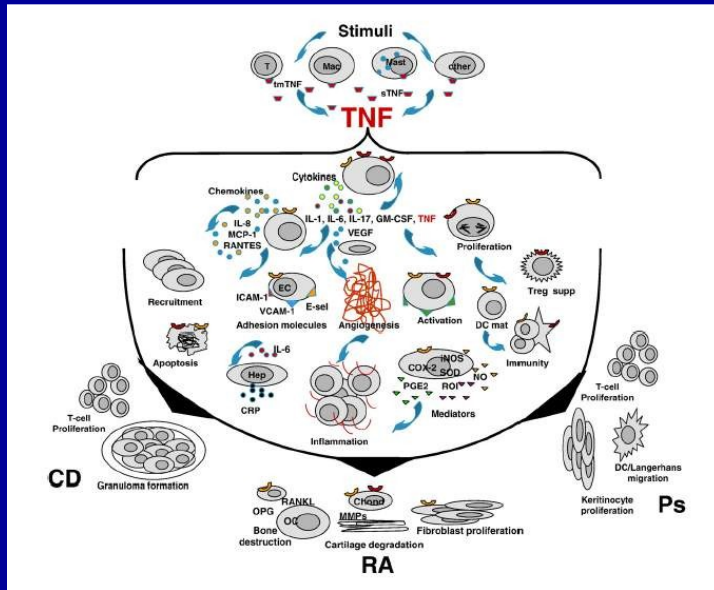








Tumor Necrosis Factor-Alpha (TNF- α)



- ◆ A cytokine and major mediator of inflammation.
- ◆ Primarily produced by macrophages, but also by T cells, NK cells and mast cells.
- ◆ Both soluble and membrane-bound forms of TNF- α have biologic activity.

The future in the biological treatment

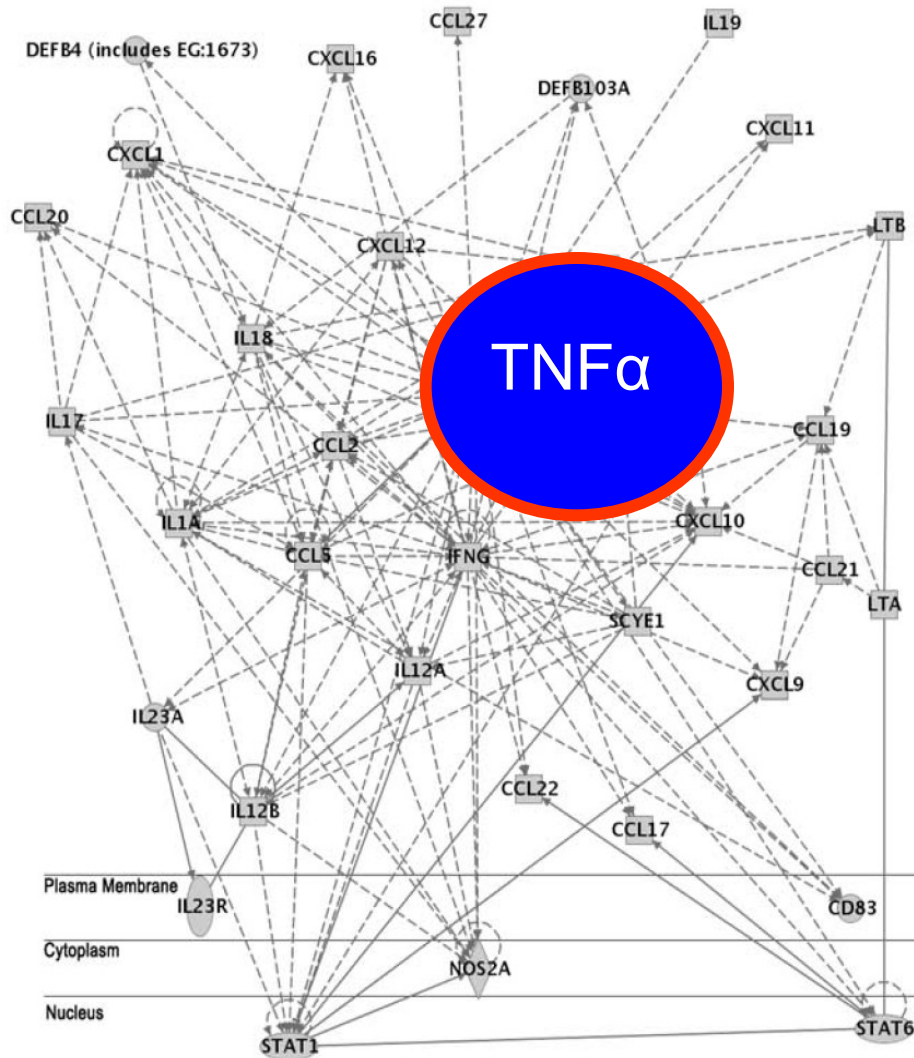
→ Prognostic biomarkers

→ Personalized medicine

→ New molecules

→ Wide knowledge of genetic background of psoriasis

TNF α Plays a Central Role in the Pathogenesis of Psoriasis



Genes and Immunity (2007) 8, 1–12
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www.nature.com/gene

REVIEW

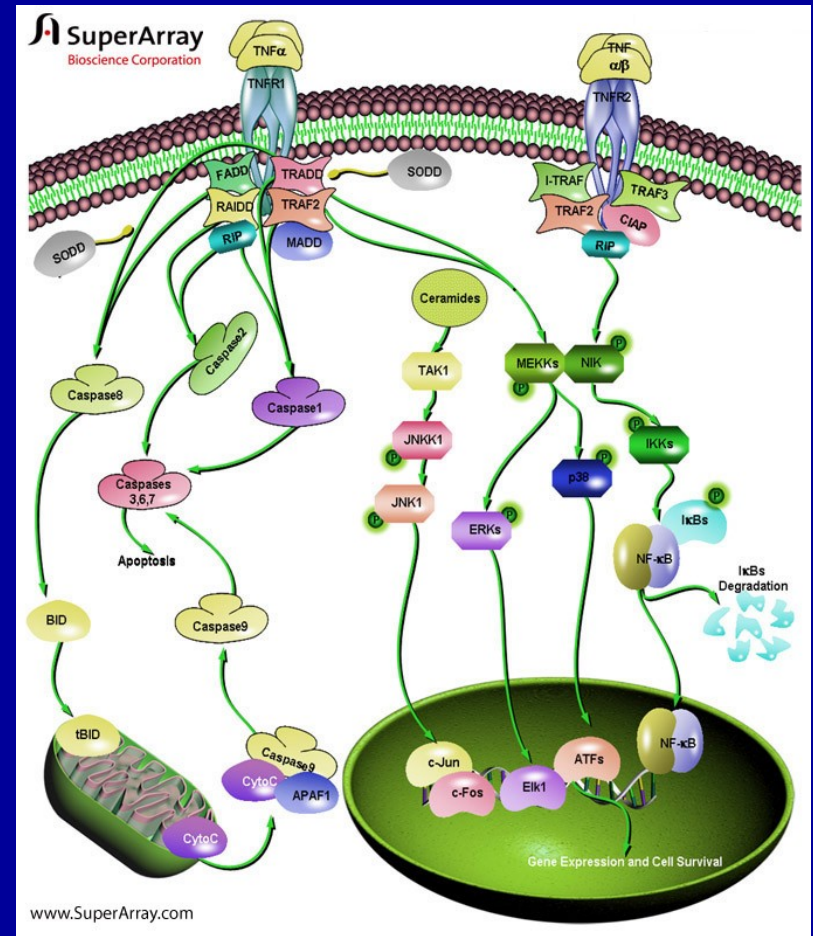
Psoriasis: genetic associations and immune system changes

Y Liu¹, JG Krueger² and AM Bowcock^{1,3}

¹Department of Genetics, Washington University School of Medicine, St Louis, MO, USA; ²Laboratory for Investigative Dermatology, The Rockefeller University, New York, NY, USA and ³Departments of Pediatrics and Medicine, Washington University School of Medicine, St Louis, MO, USA

TNF

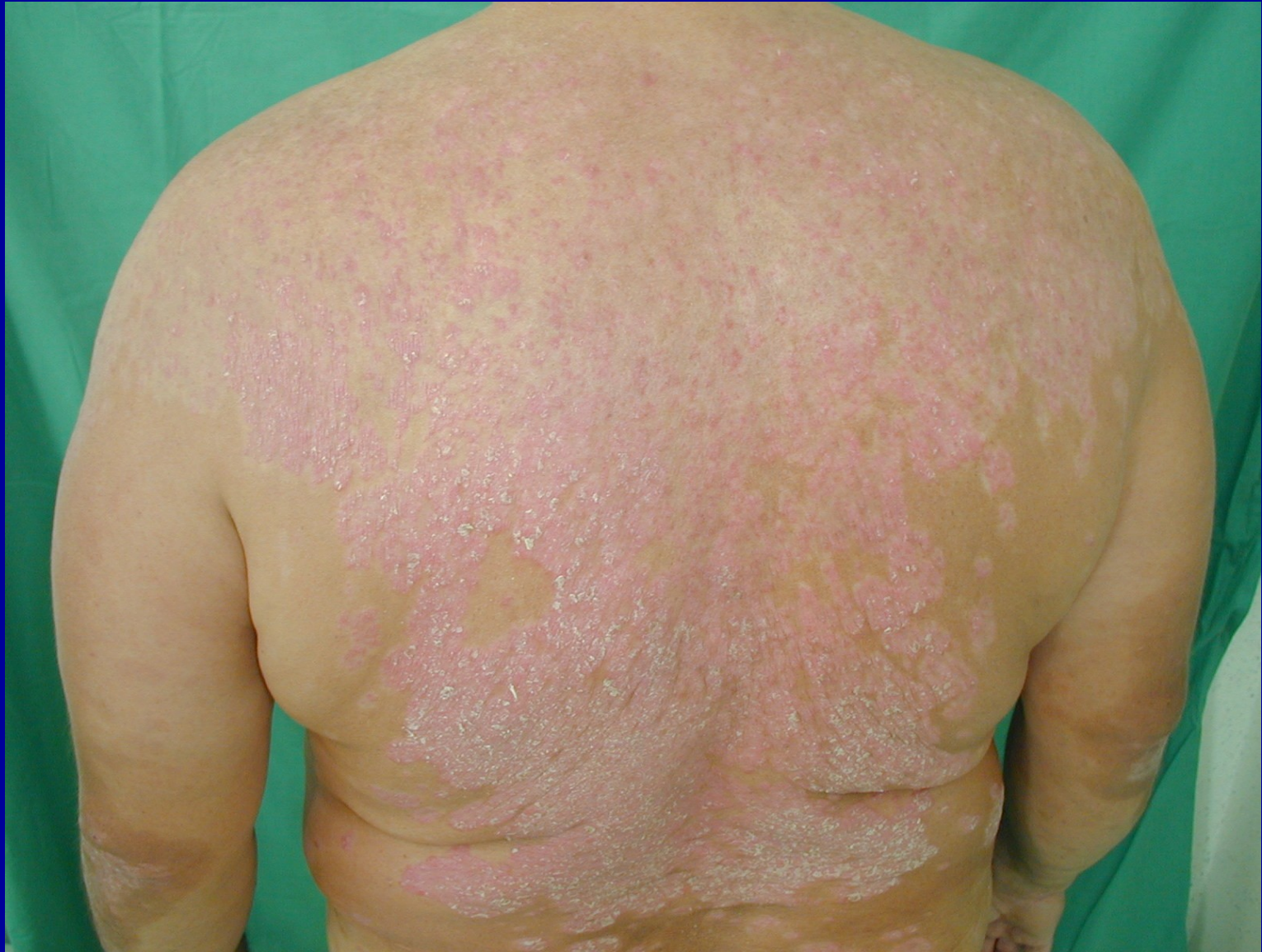
Multifunctional proinflammatory cytokine



Před léčbou



Před léčbou



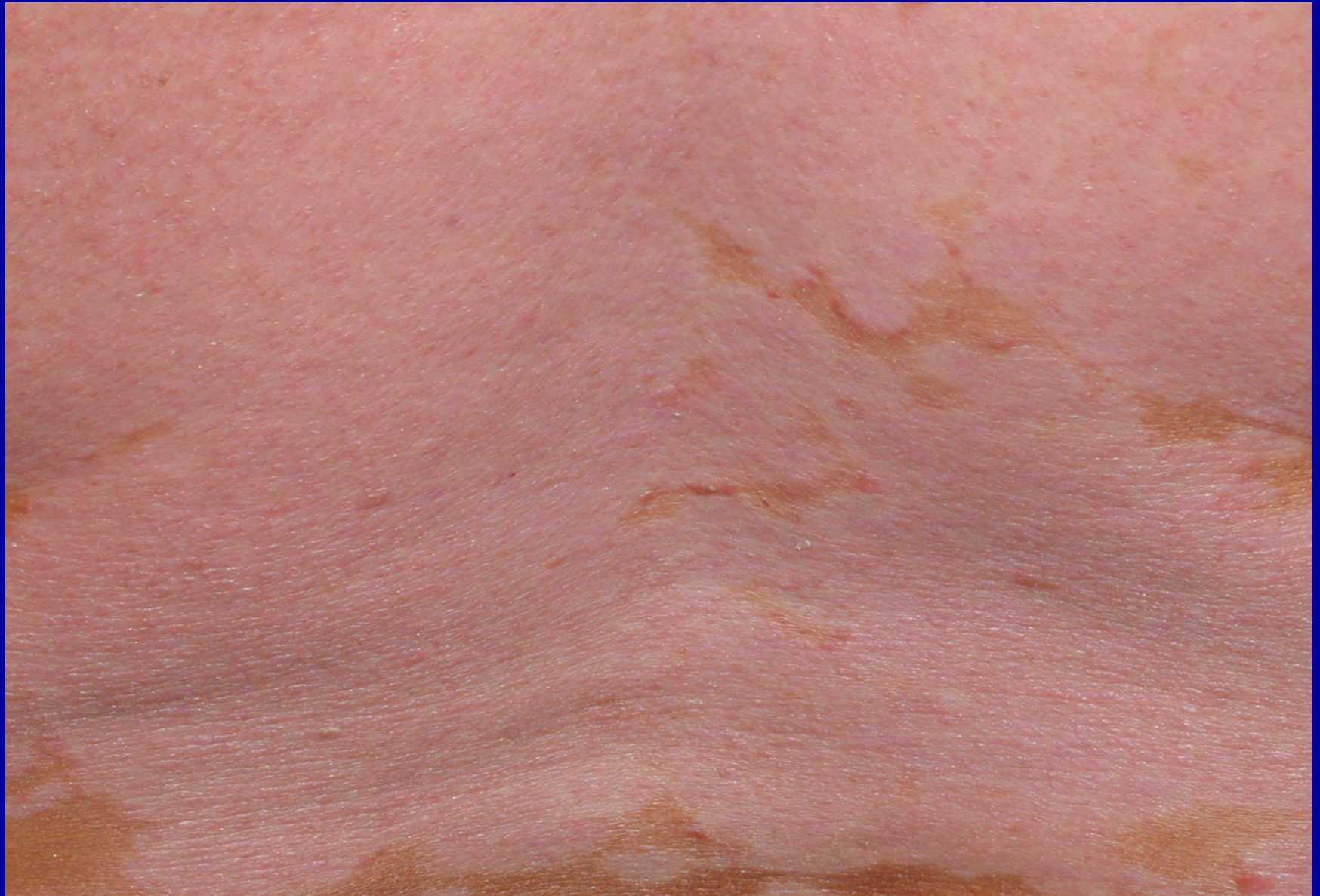
Před léčbou



Po 4 týdnech léčby



Po 4 týdnech léčby



Po 24 týdnech léčby



Po 24 týdnech léčby



Před léčbou



Po 4 týdnech léčby



Po 24 týdnech léčby



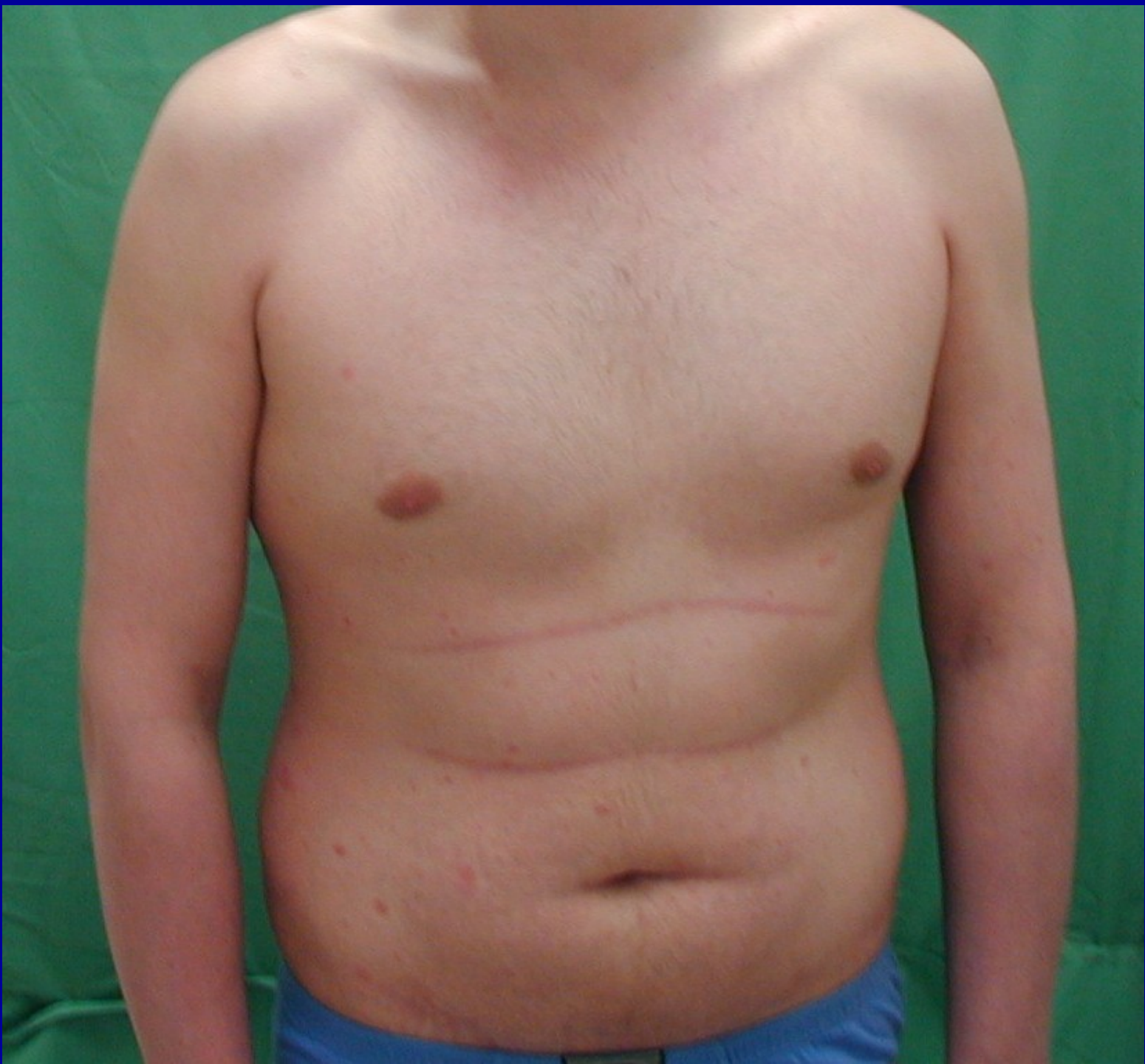


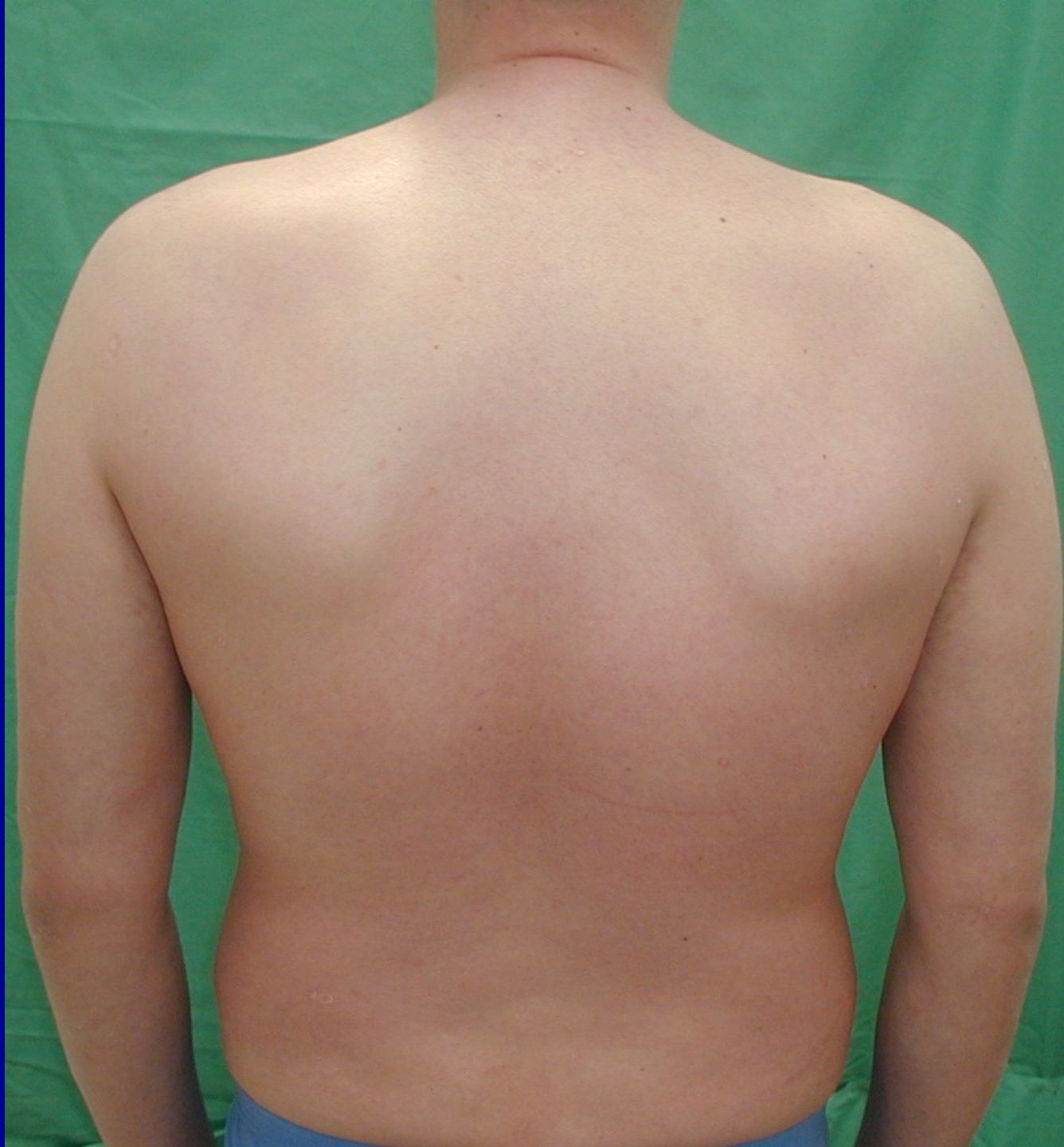
















Buchdruckerei
MAHKUS KRAL