Curriculum Vitae

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Tempat/Tgl lahir : Sragen, 21 September 1947

Alamat : Wilis Indah E-10 Malang, Telp. 0341-552395

Pendidikan :

1. Lulus Dokter dari UGM, tahun 1974
2. Lulus Cardiologist dari Univ. Indonesia, tahun 1983
3. Lulus Internist dari Univ. Airlangga, tahun 1986
4. Lulus Doktor, Univ. Airlangga, tahun 1996
5. Advanced Cardiology Course, Univ. Hongkong, tahun 1984
6. Senior Visiting Program, Institut Jantung Negara, Kualalumpur, 1996
7. Fellow American College of Cardiology (FACC), September 2006.
8. Fellow Collage Asia Pacific Society of Cardiology (FCAPC), Desember 2007
9. Fellow European Sociaty of Cardiology (FESC), 2008
10. Fellow Asean Collage of Cardiology (FASCC), 2008

Jabatan :

1. Direktur Program Pascasarjana Universitas Brawijaya
2. Ketua Ikatan Dokter Indonesia Cabang Malang Raya
3. Ketua PERKI Cabang Malang Raya
4. Ketua Kolegium Kardiovaskuler Indonesia

PENYAKIT JANTUNG KORONER

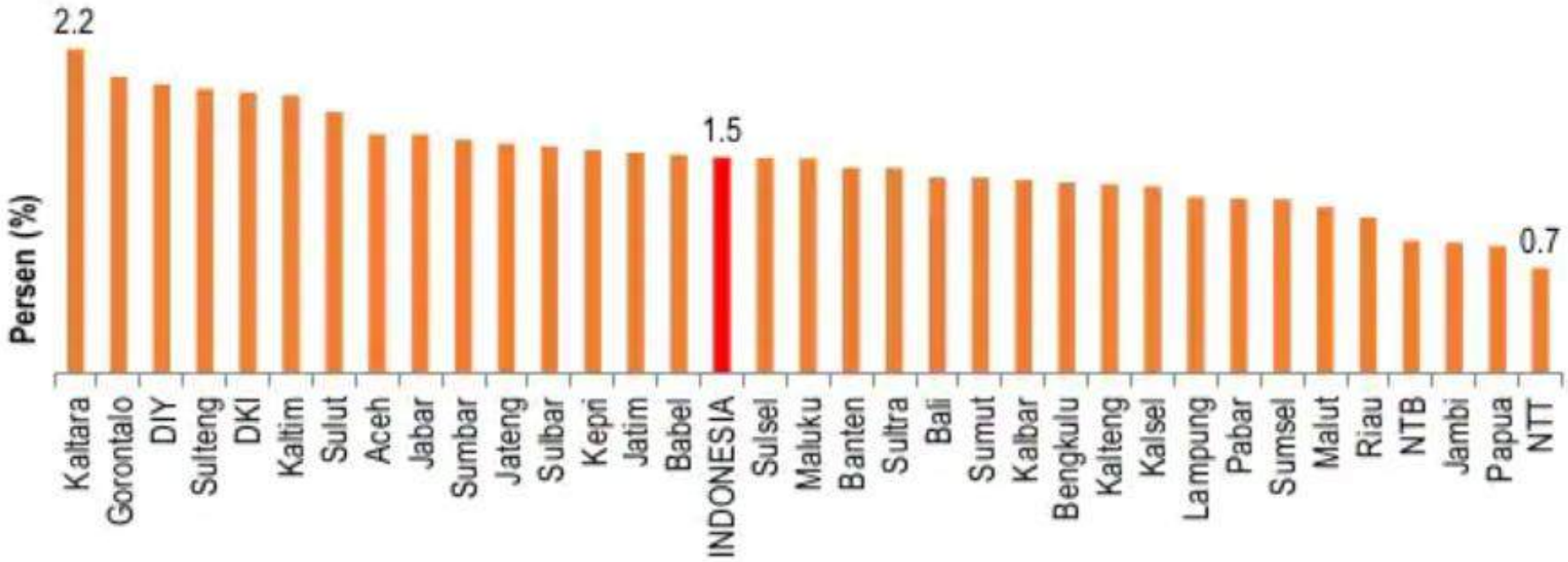
Prof. Dr. dr. Djanggan Sargowo, Sp.PD, Sp.JP(K)

Malang, Desember 2022

SURVEI KESEHATAN

RISKESDAS 2018

PREVALENSI PENYAKIT JANTUNG (DIAGNOSIS DOKTER) PADA PENDUDUK SEMUA UMUR MENURUT PROVINSI, 2018



Riskesdas, 2018

Death rate from cardiovascular disease, 2017

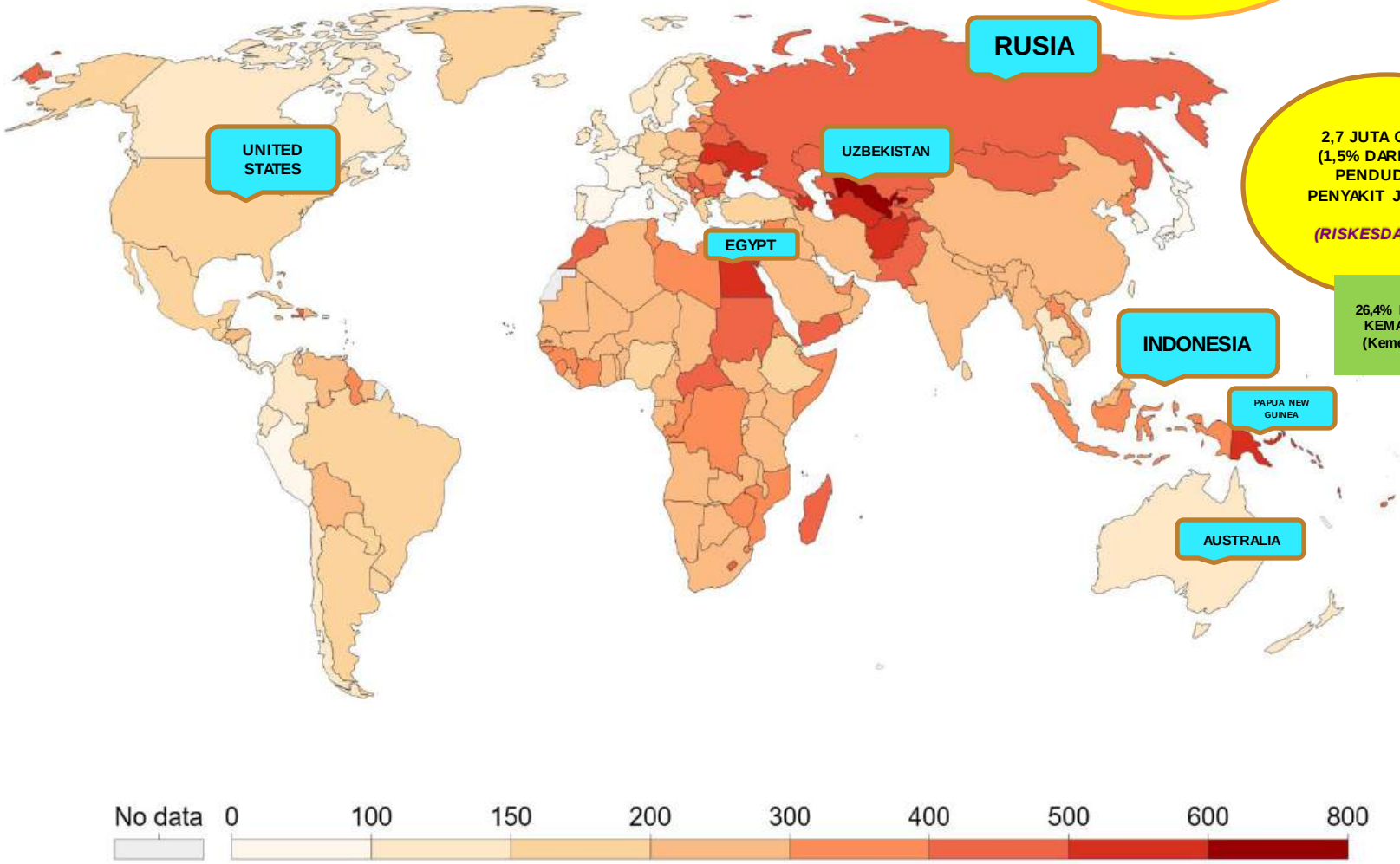
The annual number of deaths from cardiovascular diseases per 100,000 people.

17 JUTA ORANG (+): PENYAKIT JANTUNG

8,7 JUTA ORANG: PJK

(WHO 2015)

Our World in Data



2,7 JUTA ORANG (1,5% DARI TOTAL PENDUDUK): PENYAKIT JANTUNG

(RISKESDAS 2018)

26,4% DARI TOTAL KEMATIAN: PJK (Kemenkes 2019)

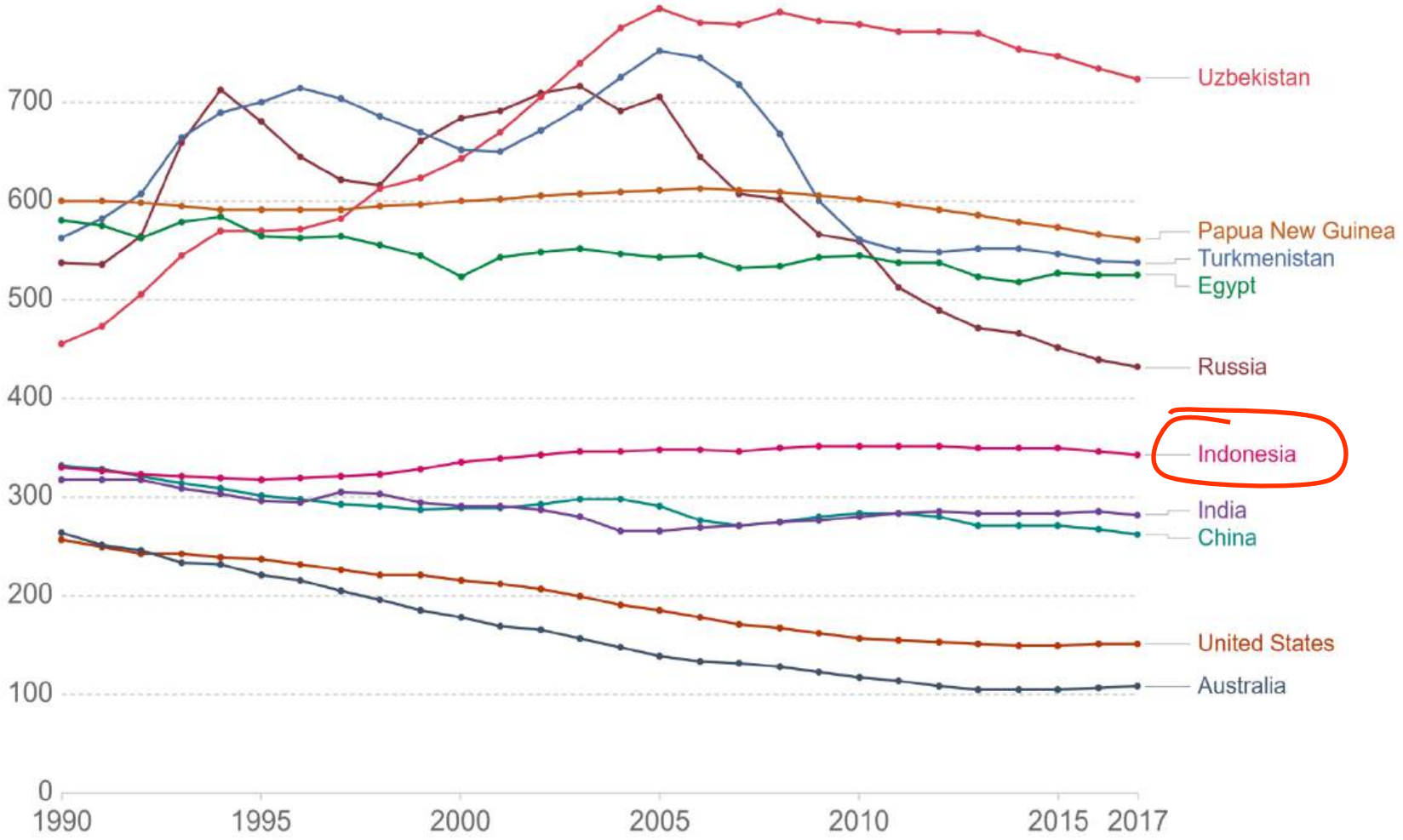
Source: IHME, Global Burden of Disease (GBD)

Note: To allow comparisons between countries and over time this metric is age-standardized.

Death rate from cardiovascular disease, 1990 to 2017

The annual number of deaths from cardiovascular diseases per 100,000 people.

Our World in Data



Source: IHME, Global Burden of Disease (GBD)

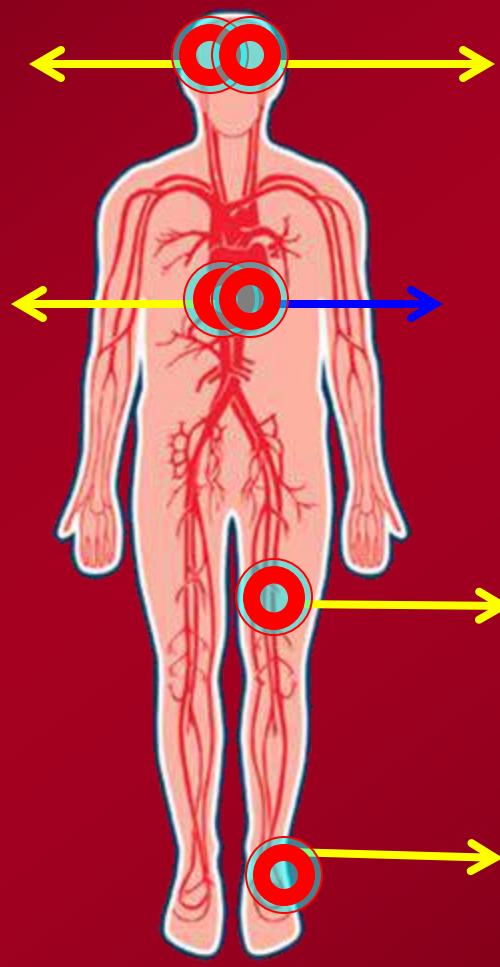
Note: To allow comparisons between countries and over time this metric is age-standardized.

OurWorldInData.org/causes-of-death • CC BY

MAJOR CLINICAL MANIFESTATIONS OF ATHEROTHROMBOSIS

Ischemic stroke

Transient ischemic attack



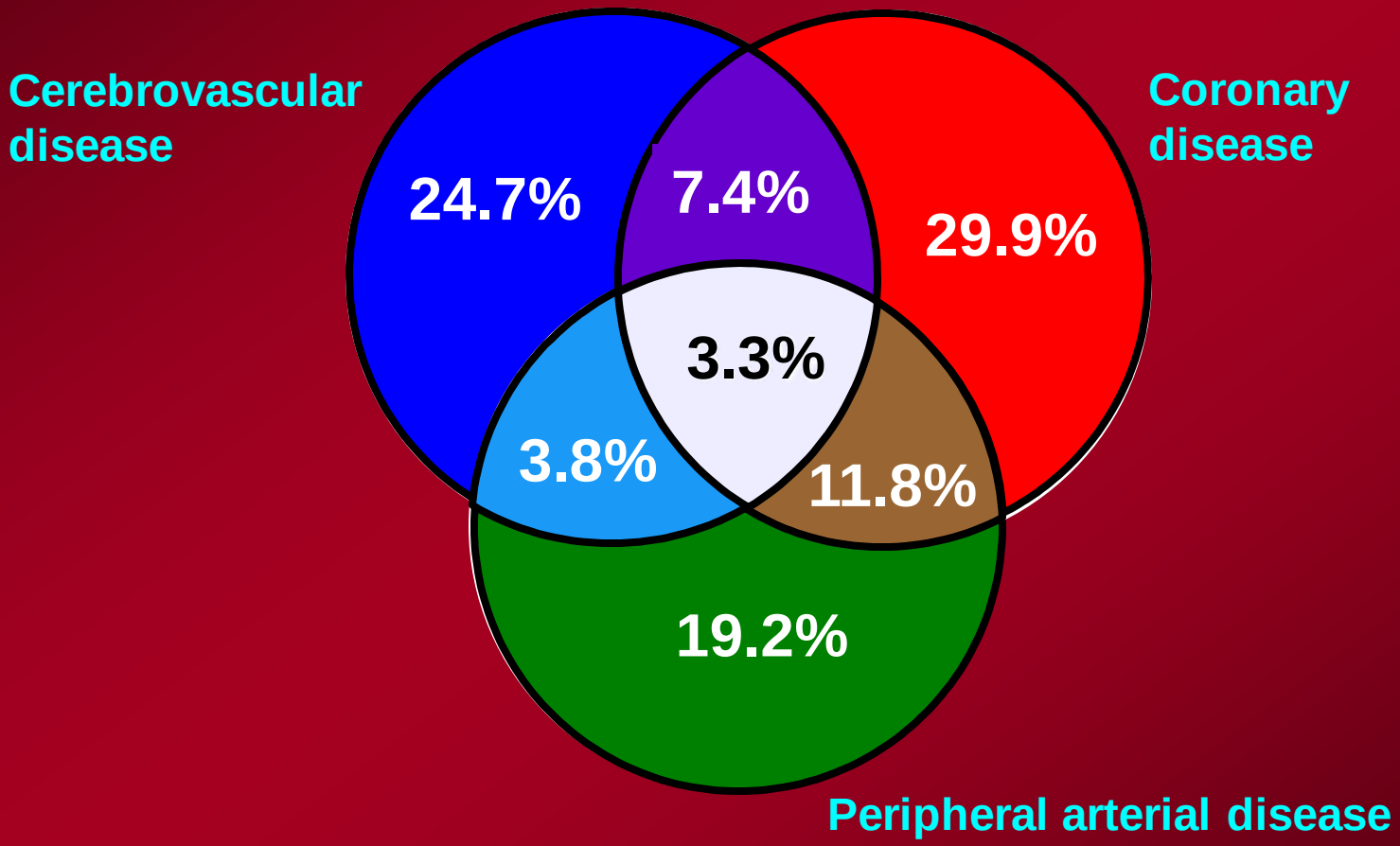
Myocardial infarction

Angina:
- Stable
- Unstable

Peripheral arterial disease:
- Intermittent claudication
- Rest Pain
- Gangrene
- Necrosis

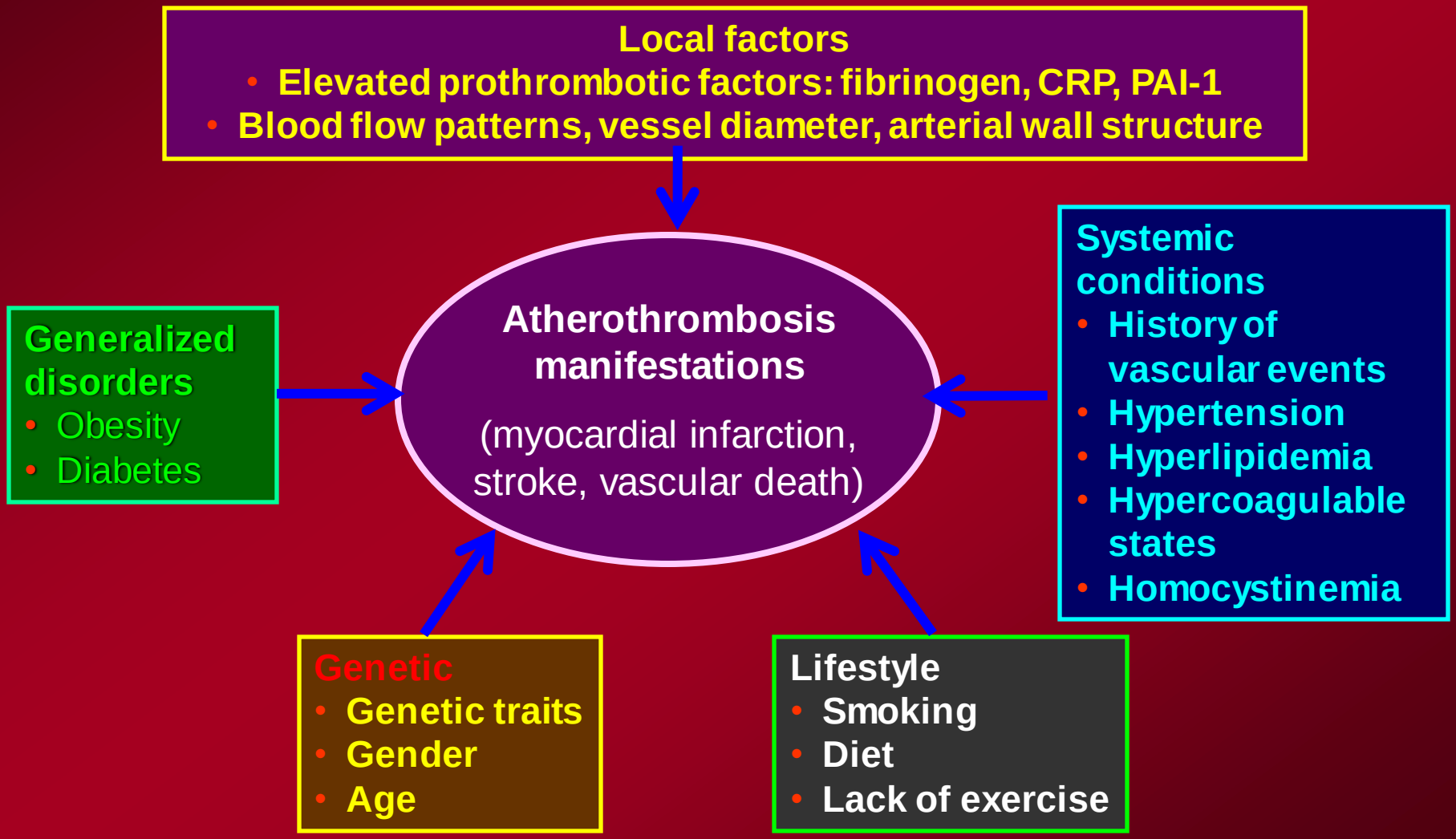
Adapted from: Drouet L. *Cerebrovasc Dis* 2002; 13(suppl 1): 1–6.

ATHEROTHROMBOSIS IS COMMONLY FOUND IN MORE THAN ONE ARTERIAL BED IN AN INDIVIDUAL PATIENT*



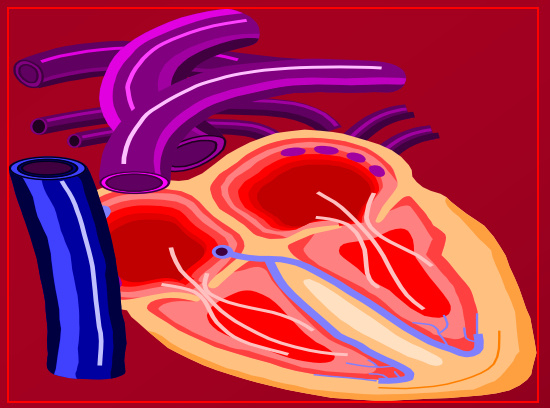
* Data from CAPRIE study (n=19,185)
Coccheri S. *Eur Heart J* 1998; 19(suppl): P1268.

IDENTIFYING THOSE AT RISK OF ATHEROTHROMBOSIS



Yusuf S *et al*. *Circulation* 2001; 104: 2746–53. **2.** Drouet L. *Cerebrovasc Dis* 2002;13(suppl 1):1–6.

KONSEP DAN TEORI ATEROSKLEROSIS

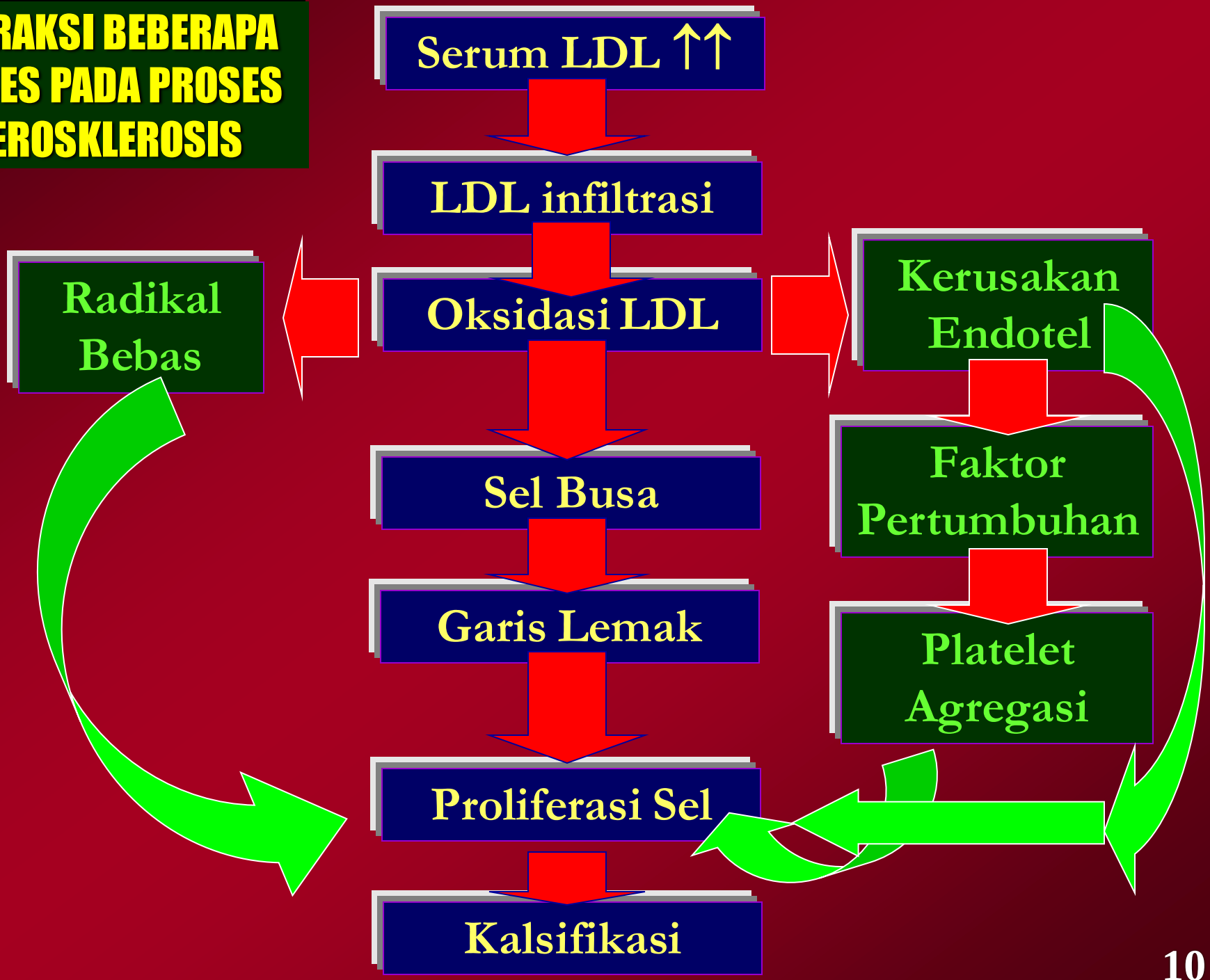


Konsep Teori Penyakit

- Infiltrasi lipid
- Kerusakan endotel
- Radikal bebas
- Imunologi

→ Inflamasi → Aterosklerosis / PJK

INTERAKSI BEBERAPA PROSES PADA PROSES ATEROSKLEROSIS



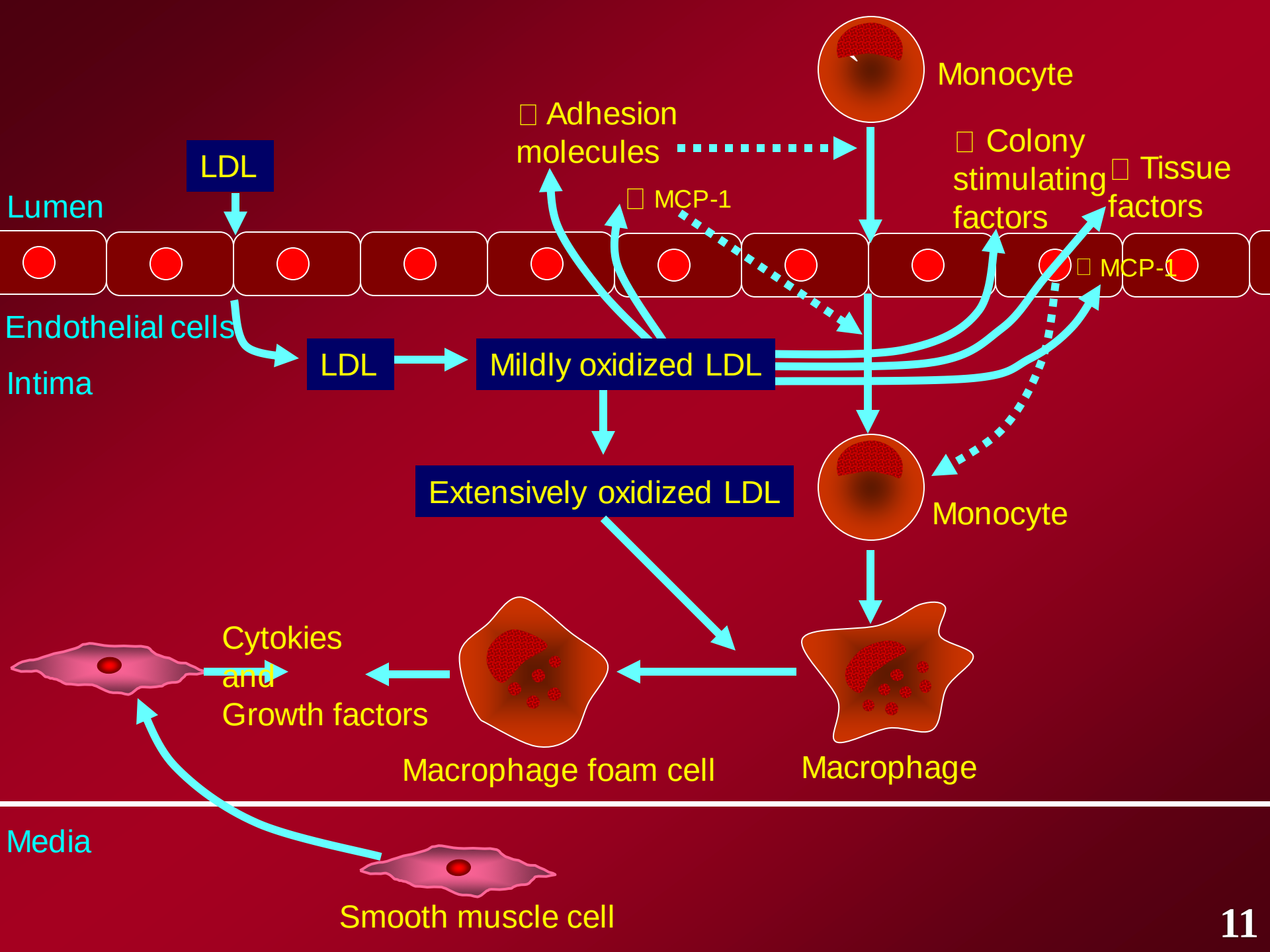
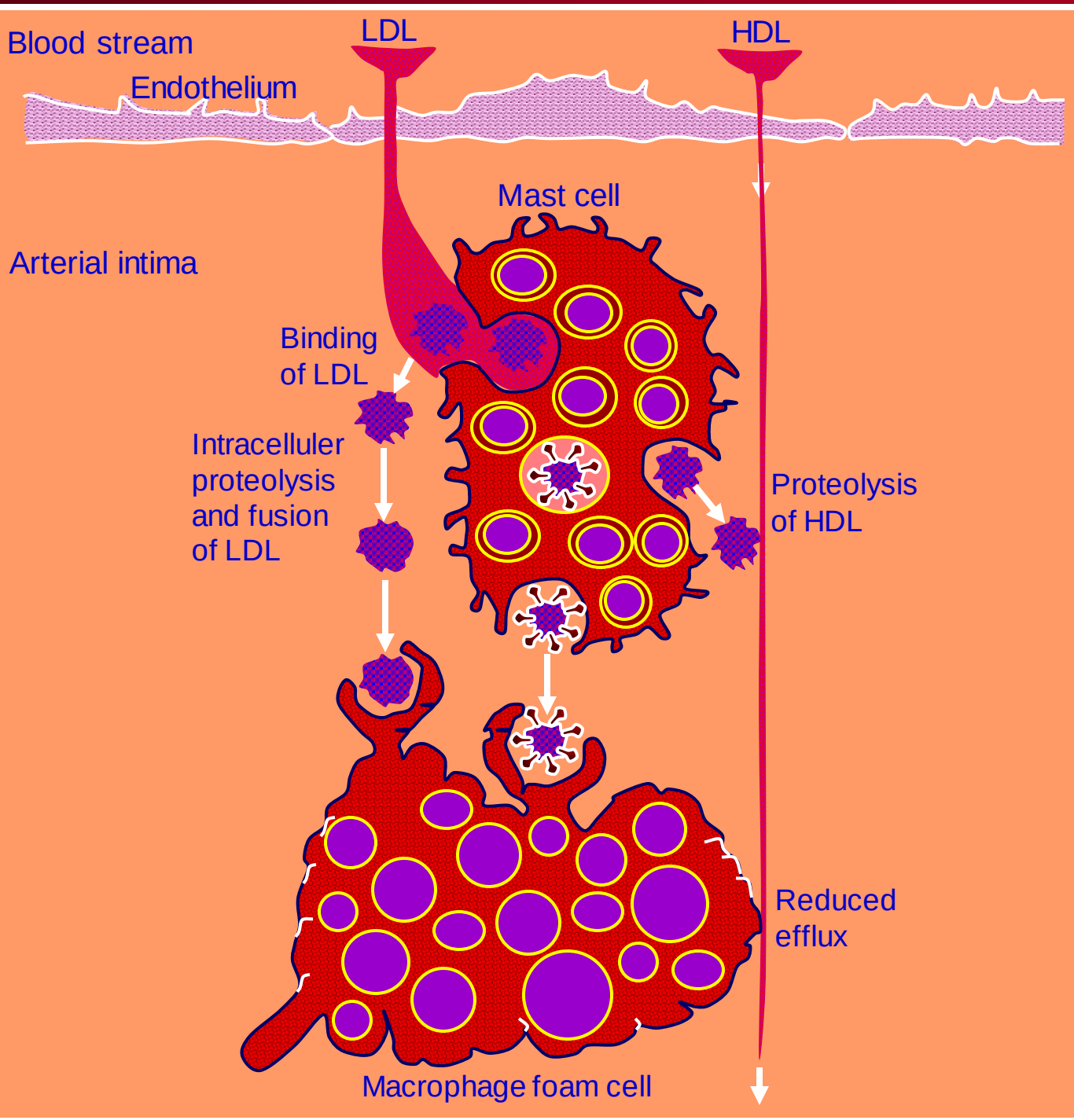
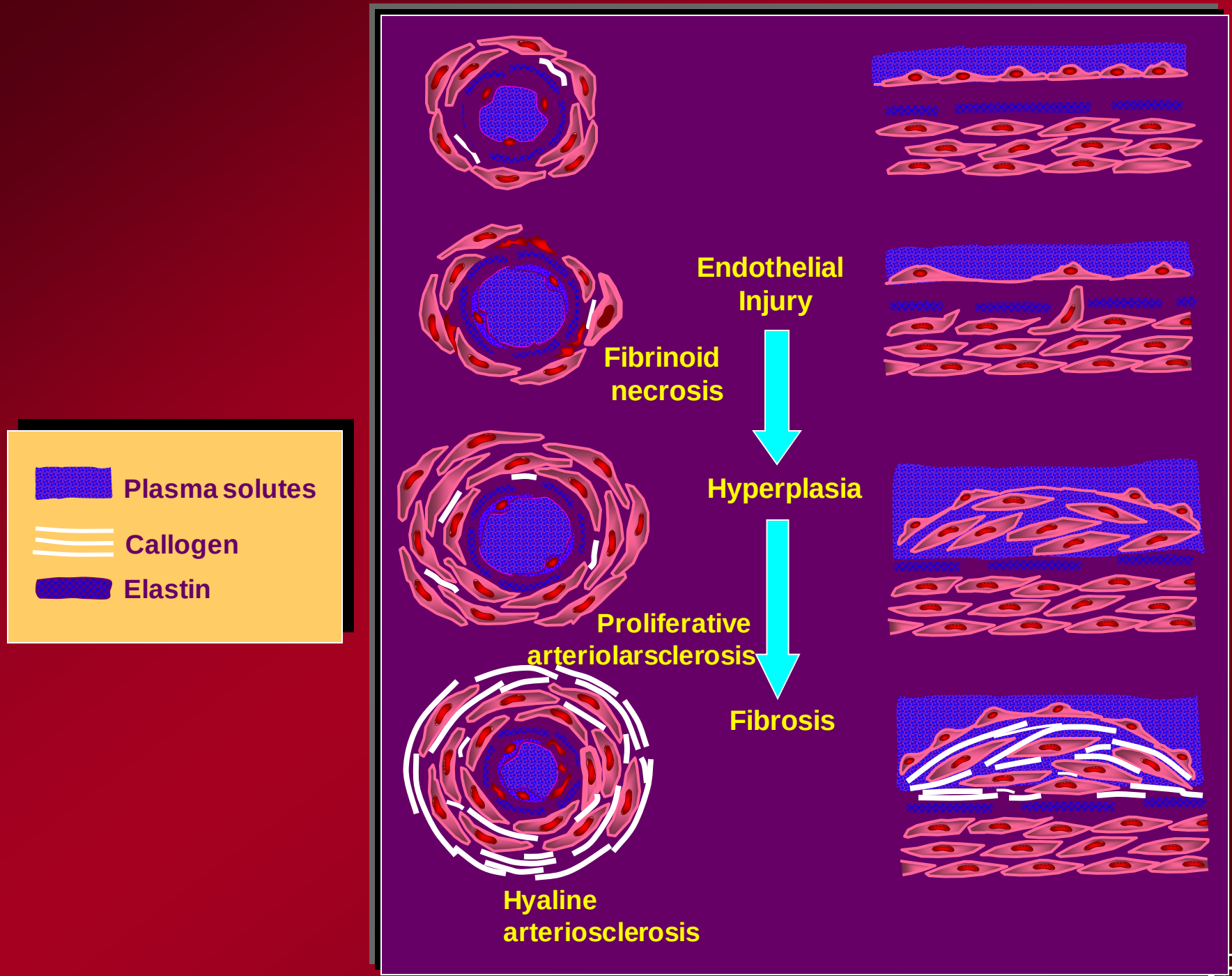
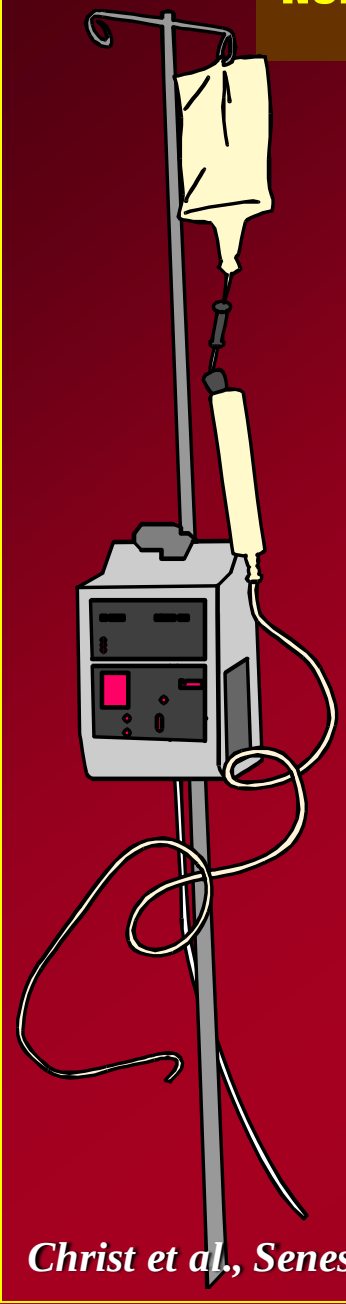

Monocyte
Adhesion molecules
LDL
Colony stimulating factors
Tissue factors
MCP-1
Lumen
MCP-1
Endothelial cells
LDL
Mildly oxidized LDL
Intima
Extensively oxidized LDL
Monocyte
Cytokies and Growth factors
Macrophage foam cell
Macrophage
Media
Smooth muscle cell

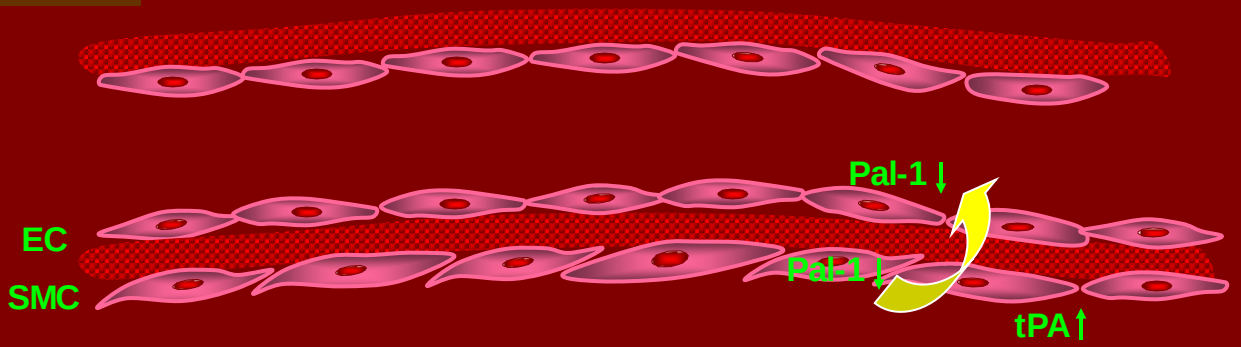
Figure :
Proposed Dual Action of Exocytosed Mast Cell Granules *(The Granule Remnants)* of Lipoprotein Metabolism in The Arterial Intima



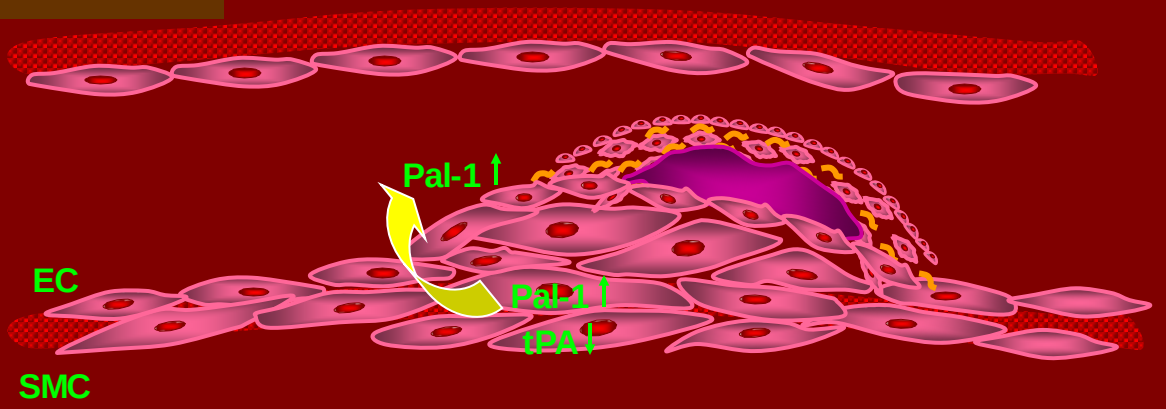

Plasma solutes
Callogen
Elastin
Endothelial Injury
Fibrinoid necrosis
Hyperplasia
Proliferative arteriolarsclerosis
Fibrosis
Hyaline arteriosclerosis



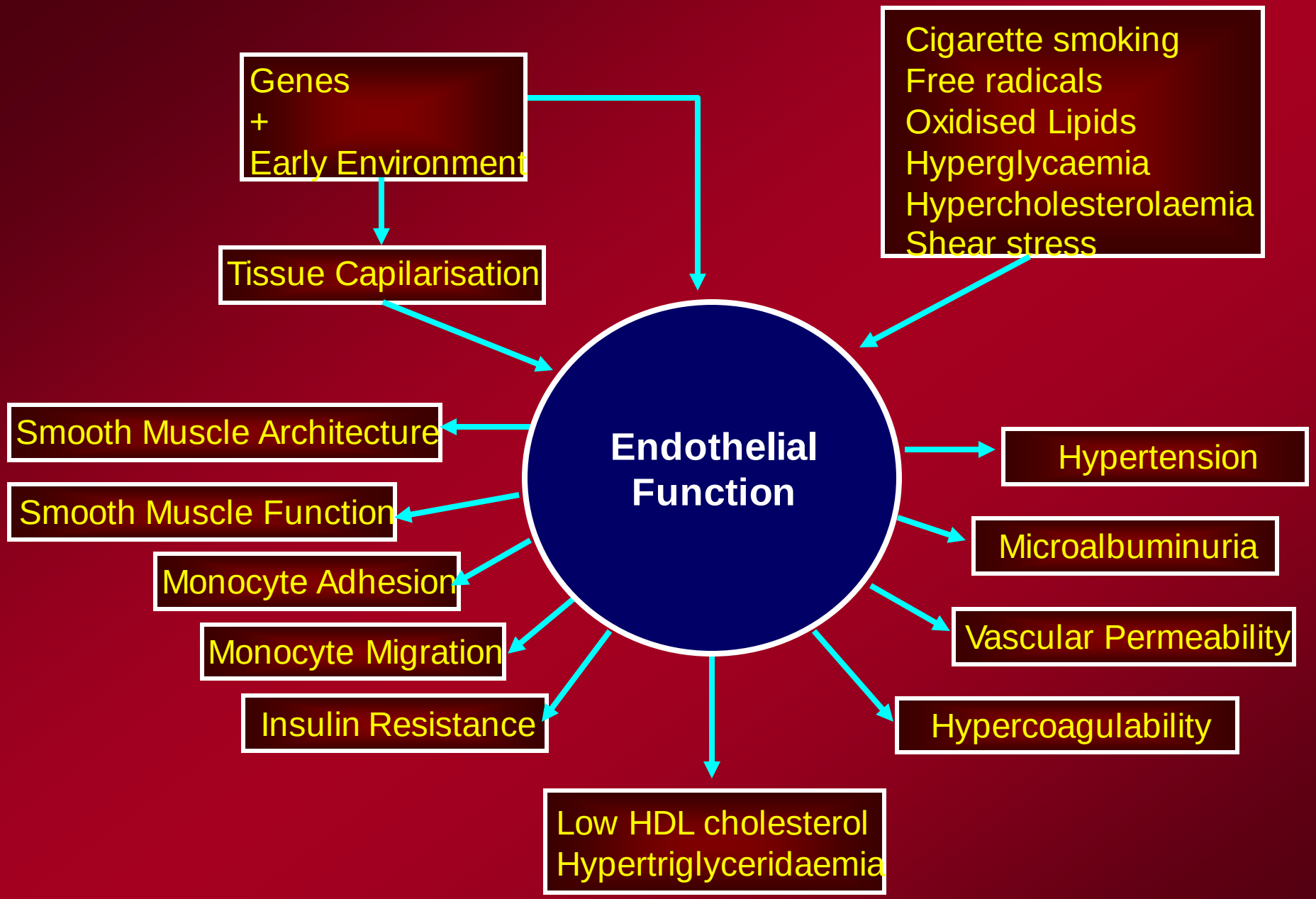
Normal vessel



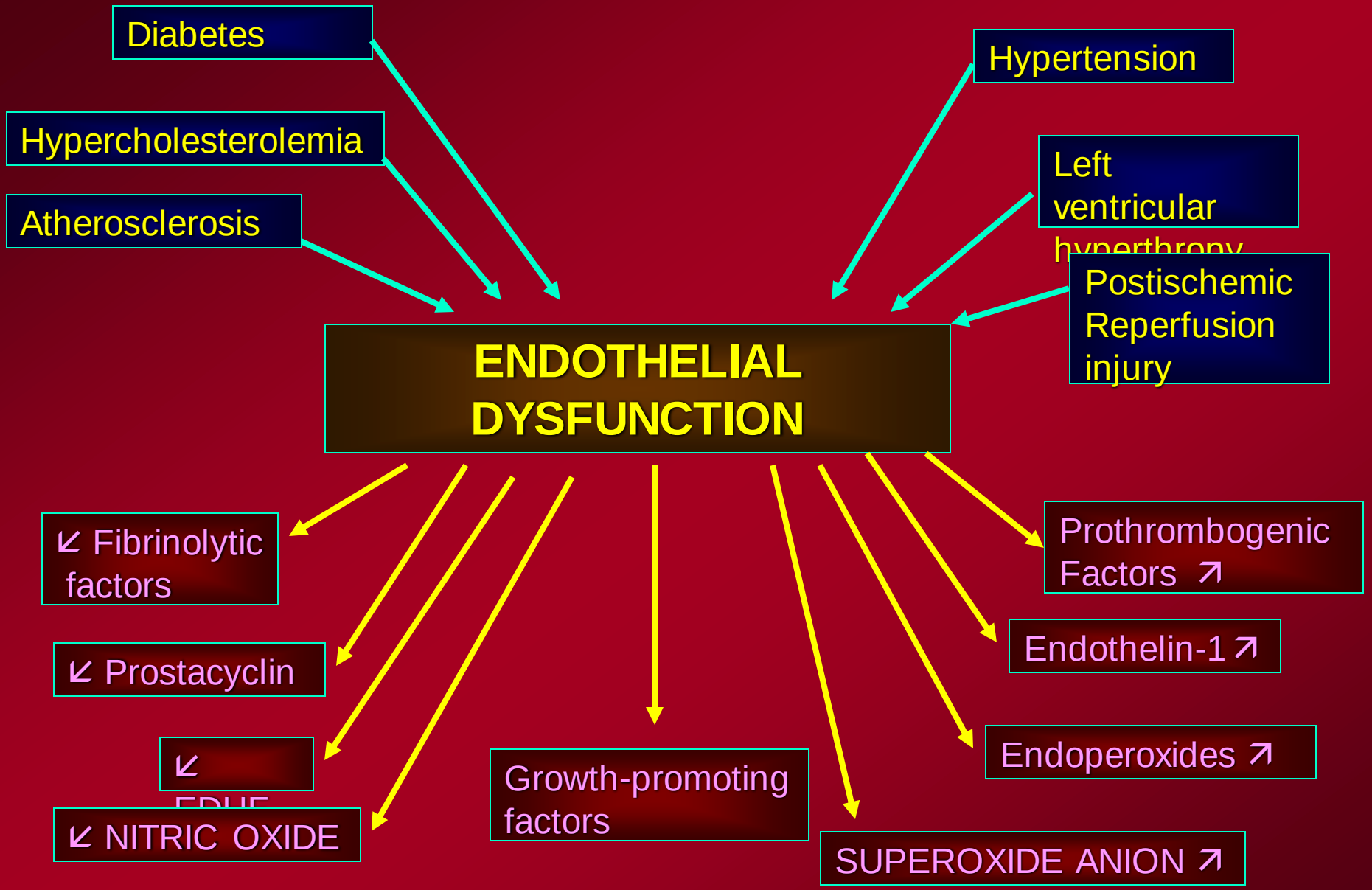
Atherosclerotic plaque



Christ et al., Senescent SMCs Increase Vascular Wall PAI-1 Expression

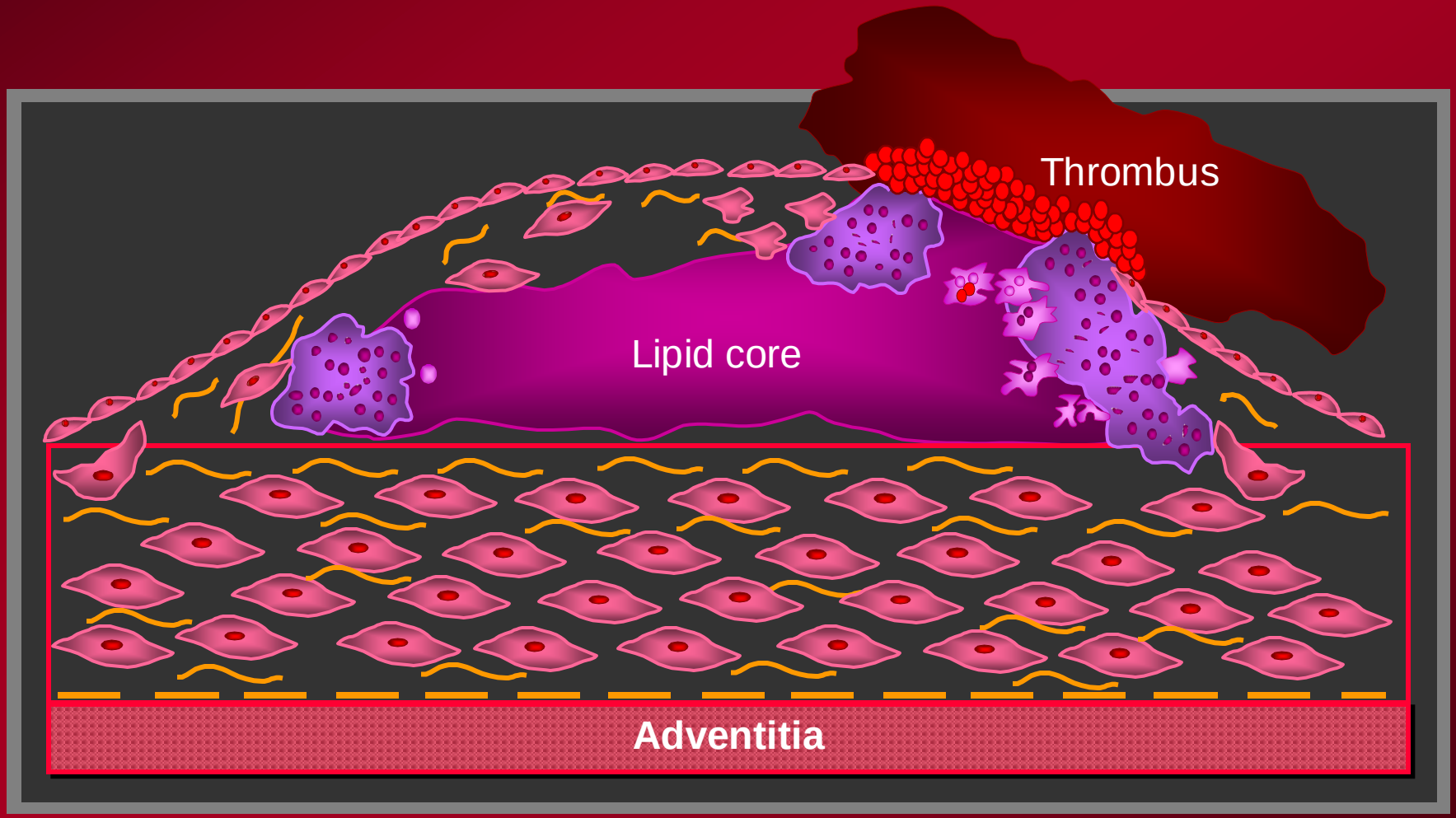


(Diabetes, Vol 46, Suppl 2, Sptember 1997)

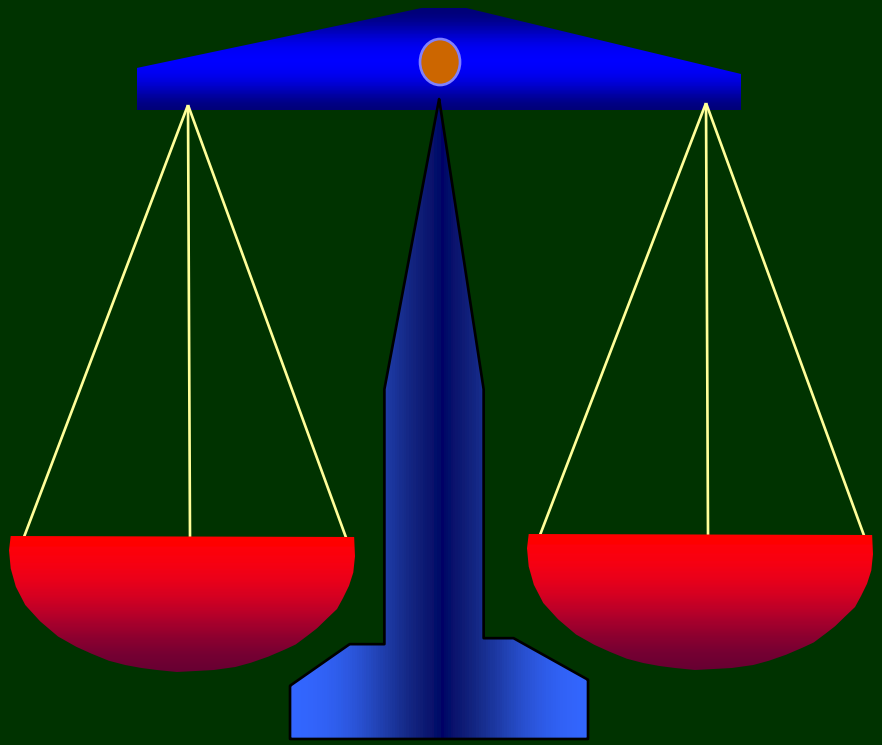

Diabetes
Hypercholesterolemia
Atherosclerosis
Hypertension
Left ventricular hyperthropy
Postischemic Reperfusion injury
ENDOTHELIAL DYSFUNCTION
↙ Fibrinolytic factors
↙ Prostacyclin
↙ NITRIC OXIDE
Growth-promoting factors
SUPEROXIDE ANION ↗
Endoperoxides ↗
Endothelin-1 ↗
Prothrombogenic Factors ↗

UNSTABLE CORONARY ARTERY DISEASE (II)

Thrombus forms and extends into the lumen



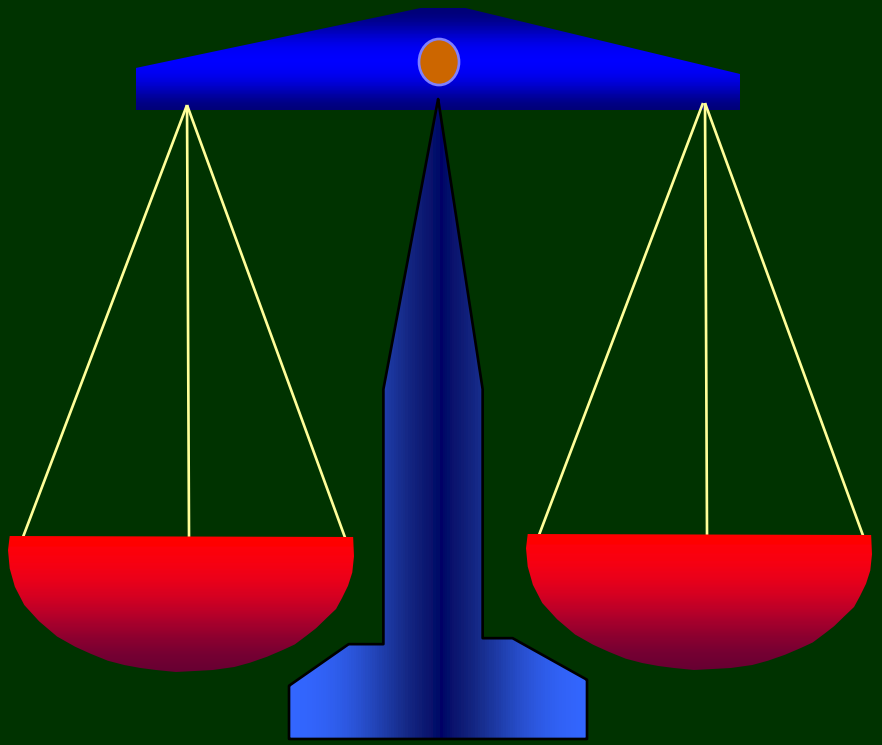
CONSTRICTOR DILATOR



Endothelium-1
Angiotensin-II
Vasconstrictor
Prostaglandins

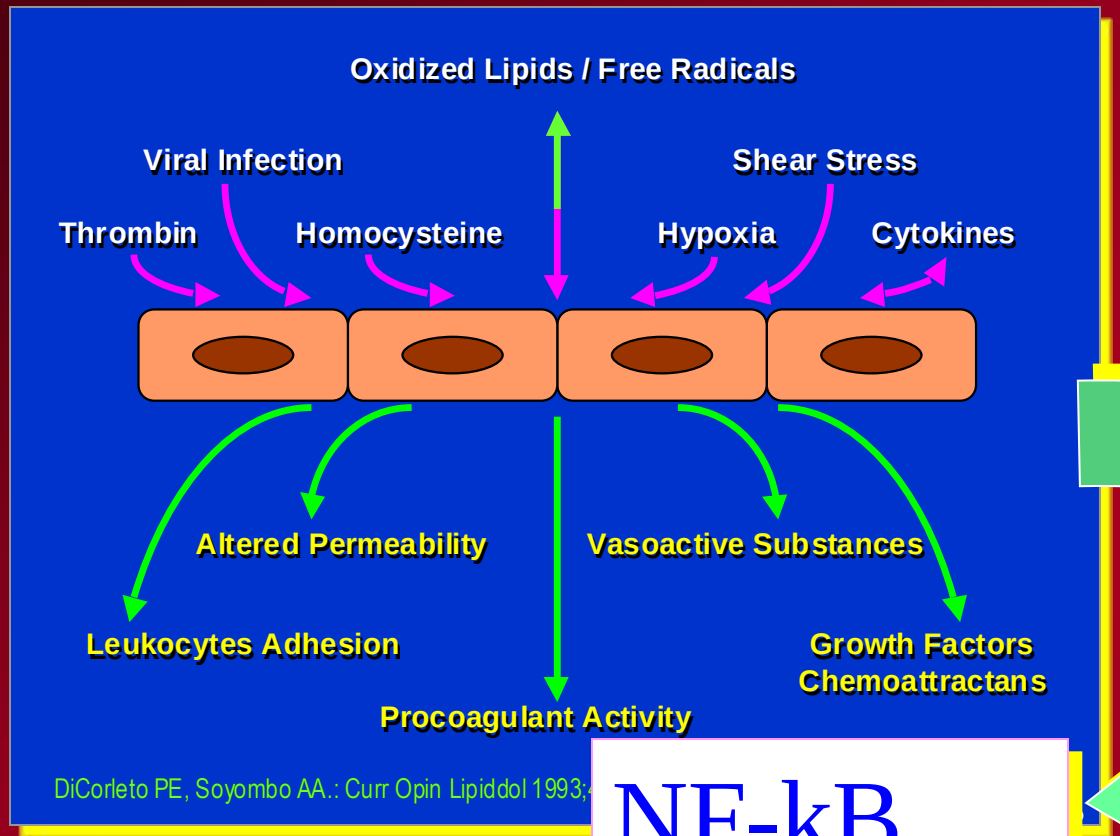
Prostacyclin
Nitric oxide
Other “EDRF-Like”
Substances

PRO ANTI



Platelet-activating factor
Tissue factor
Von willebrand factor
Plasminogen activator Inhibitor-1
Other Coagulation factors

Prostacyclin
Thrombomodulin
Ecto-ADPase
Tissue Plasminogen Activator
Urokinase
Heparin-Like Molecules

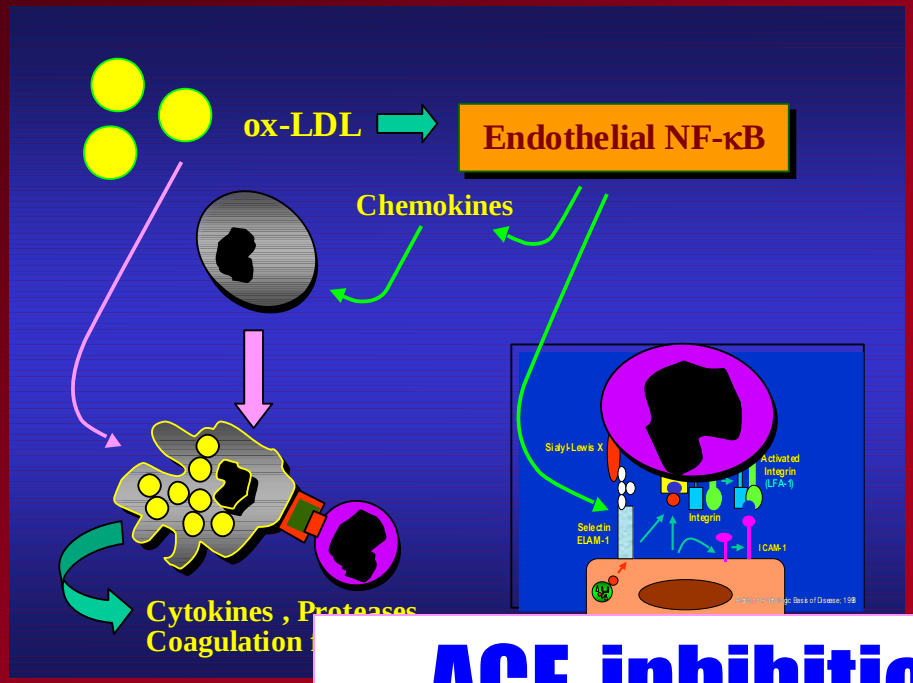


NF-kB

Survival signals
- A20, A1
- Bcl-2, Bcl-xL
- Caspase inhibitors
- Hemoxygenase 1
- MnSOD

Proinflammatory signals
- Cytokines
- Adhesion molecules
- Chemokines
- Coagulation factors

(Lawrence GS, Cardiology update and interventional cardiology)



ACE-inhibitior

Hemandez-Presa et al : Angiotensin-converting enzyme inhibition (ACE-inhibitor) prevents arterial NF-□B activation, MCP-1 expression, and macrophage infiltration in a rabbit model of early accelerated atherosclerosis. Circulation 1997 ;95:1532-1541

(Lawrence GS, Cardiology update and interventional cardiology)

REDOX REGULATION OF ENDOTHELIAL DYSFUNCTION & ACTIVATION

$O_2^{\circ-}$

H_2O_2

OH°

↓ NO Activity
↓ G-Protein Function
↑ Protein Kinase C

Oxidation

Endothelial Dysfunction

ENDOTHELIAL DYSFUNCTION AND ACUTE CORONARY SYNDROMES

- Vasoconstriction
- Platelet Aggregation
- SMC Proliferation
- Leukocyte Adhesion
- LDL Oxidation
- Activation of MMPs

Endothelial Dysfunction

Plaque Rupture

Thrombosis

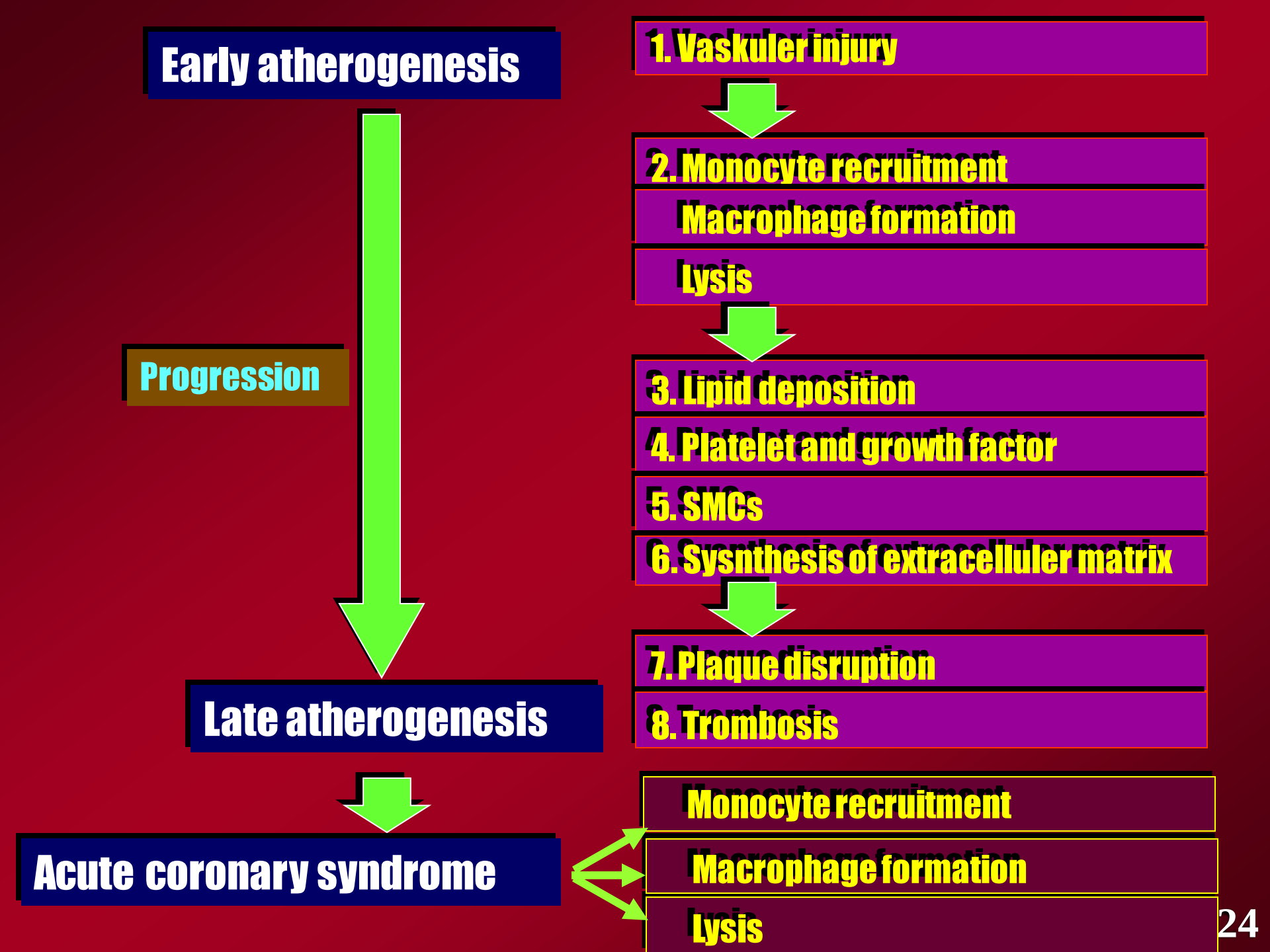
Matrix Remodeling

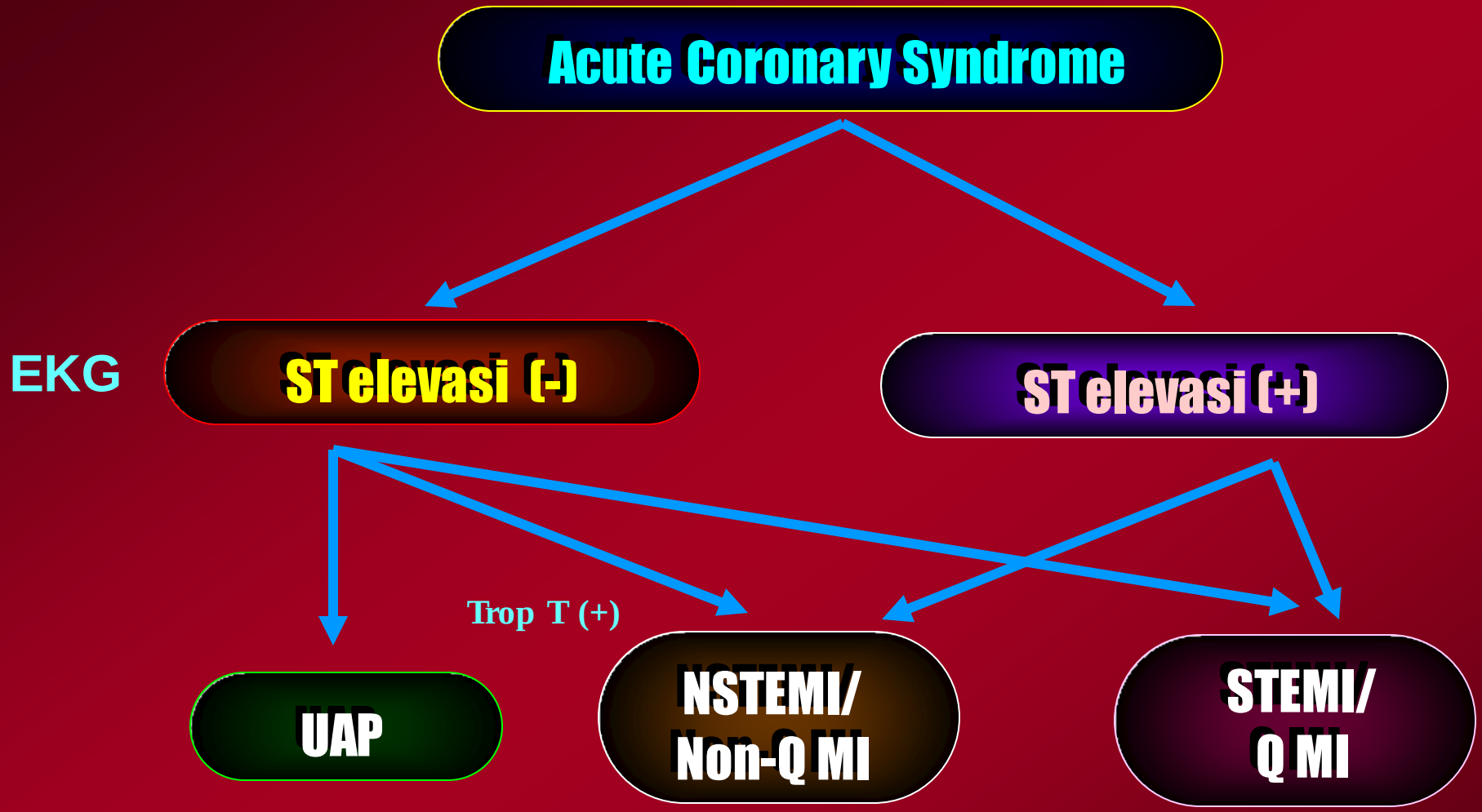
(D. Sargowo)

ENDOTHELIAL DYSFUNCTION AND ACUTE CORONARY SYNDROMES

- Vasospasm
- Plaque Rupture
- Thrombosis
- Matrix Remodeling

ACUTE CORONARY SYNDROMES


Early atherogenesis
Progression
Late atherogenesis
Acute coronary syndrome
1. Vaskuler injury
2. Monocyte recruitment
Macrophage formation
Lysis
3. Lipid deposition
4. Platelet and growth factor
5. SMCs
6. Sysnthesis of extracelluler matrix
7. Plaque disruption
8. Trombosis
Monocyte recruitment
Macrophage formation
Lysis



UAP : Unstable angina pectoris, Non-Q MI: Non Q wavw myocardial infarction
NSTEMI : Non ST-elevation myocardial infarction
STEMI : ST-elevation myocardial infarction
Q MI : Q wave myocardial infarction