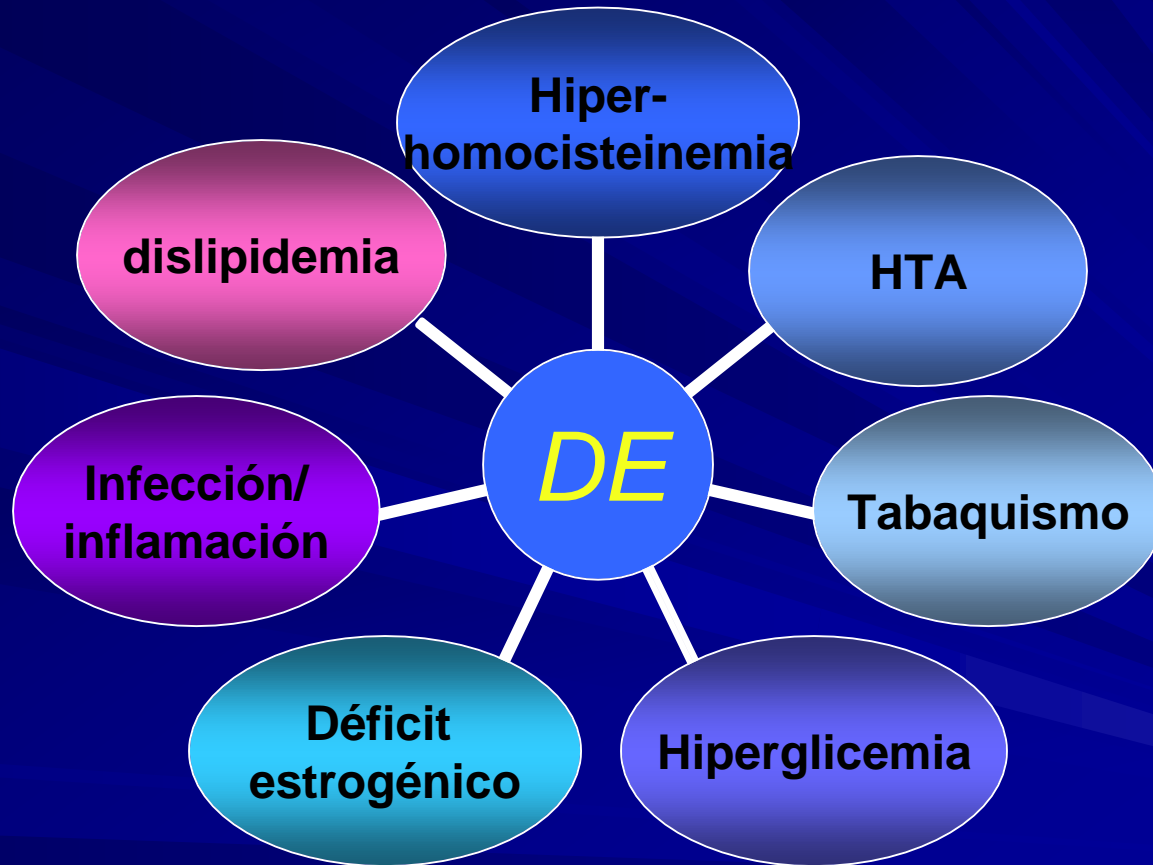


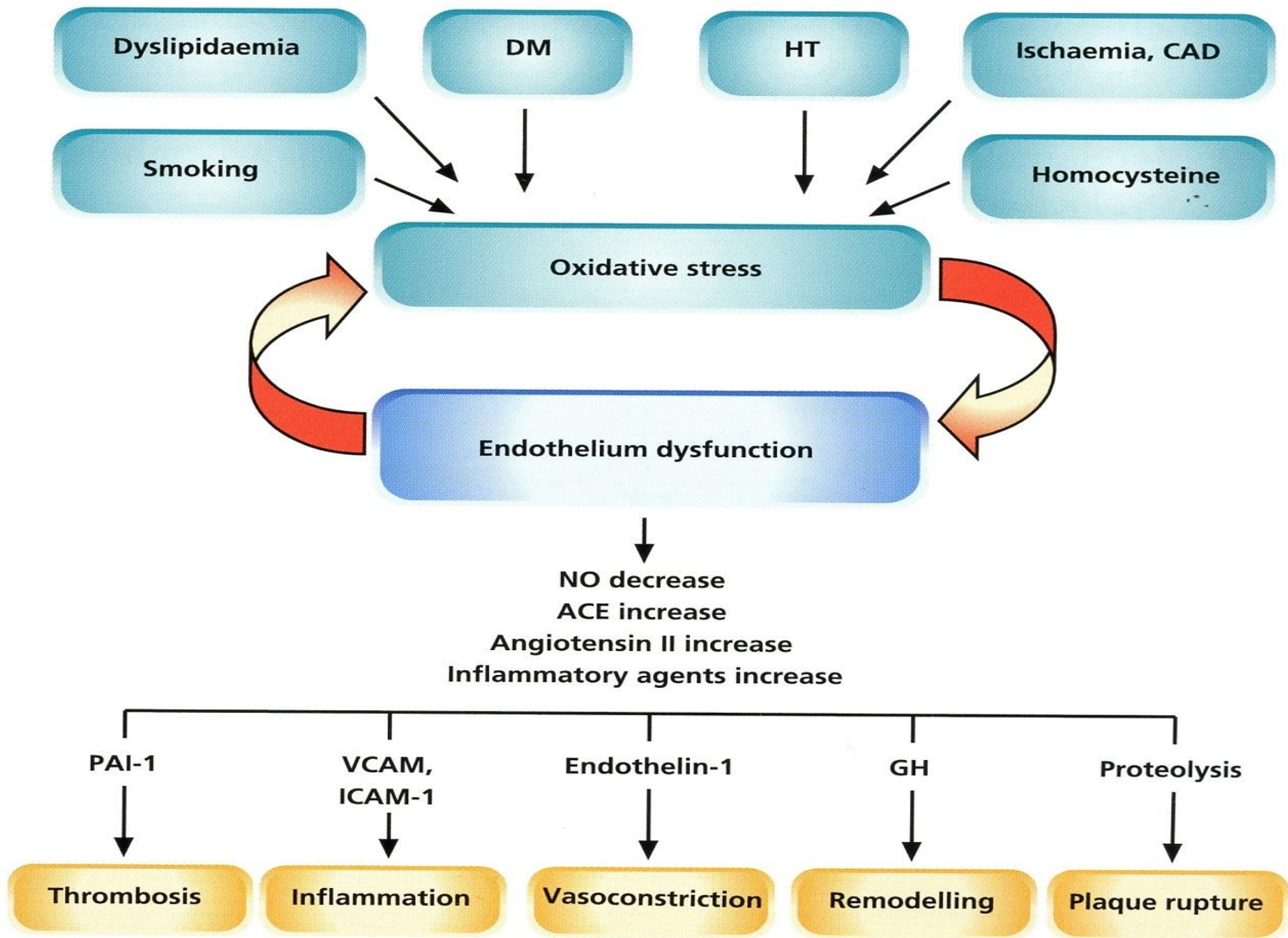
FACTORES DE RIESGO VASCULAR Y DISFUNCION ENDOTELIAL

Dr. Rafael Fernández Abarca, FACP

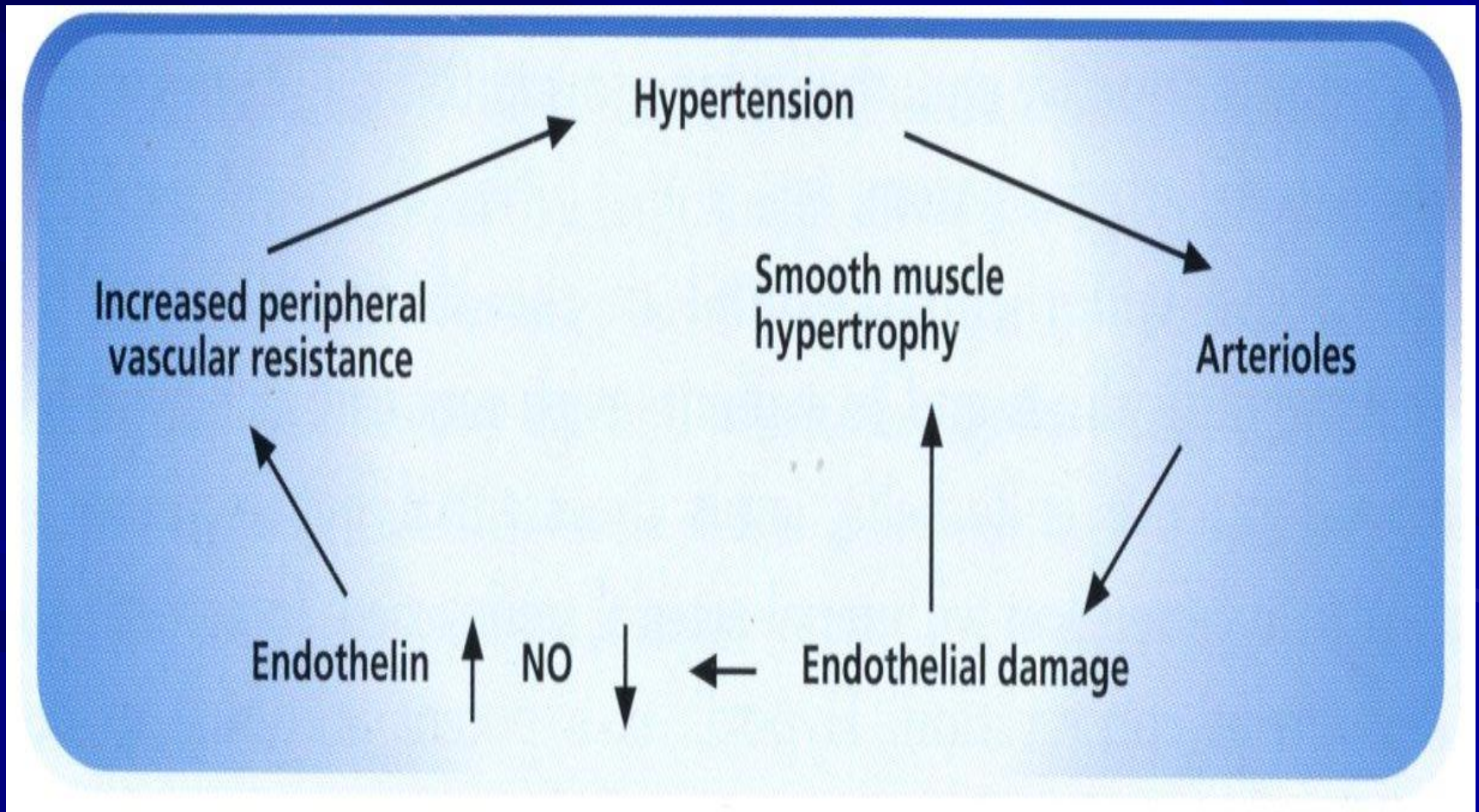
Factores de Riesgo de Disfunción Endotelial.

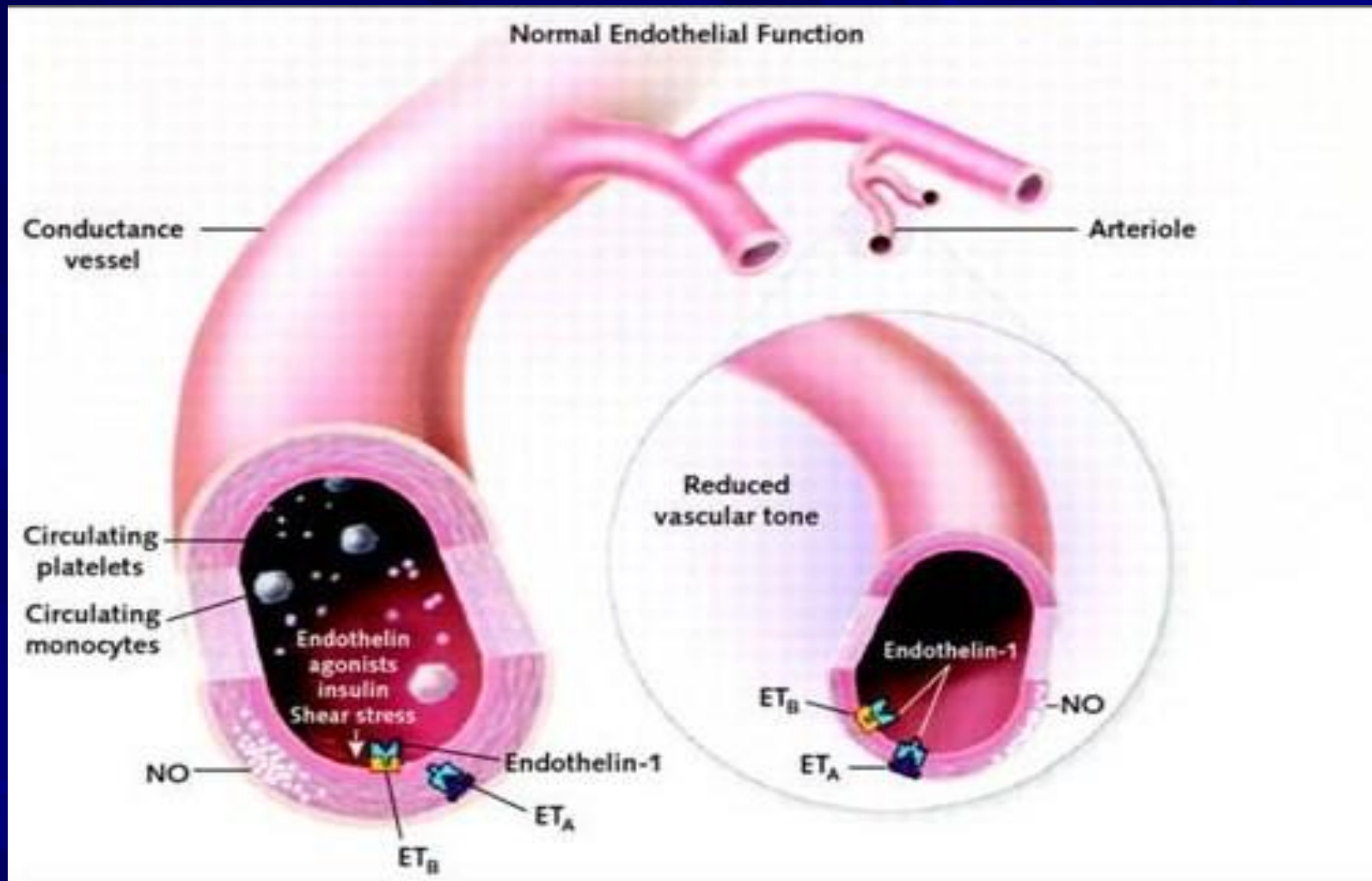
Contribución etiopatogénica





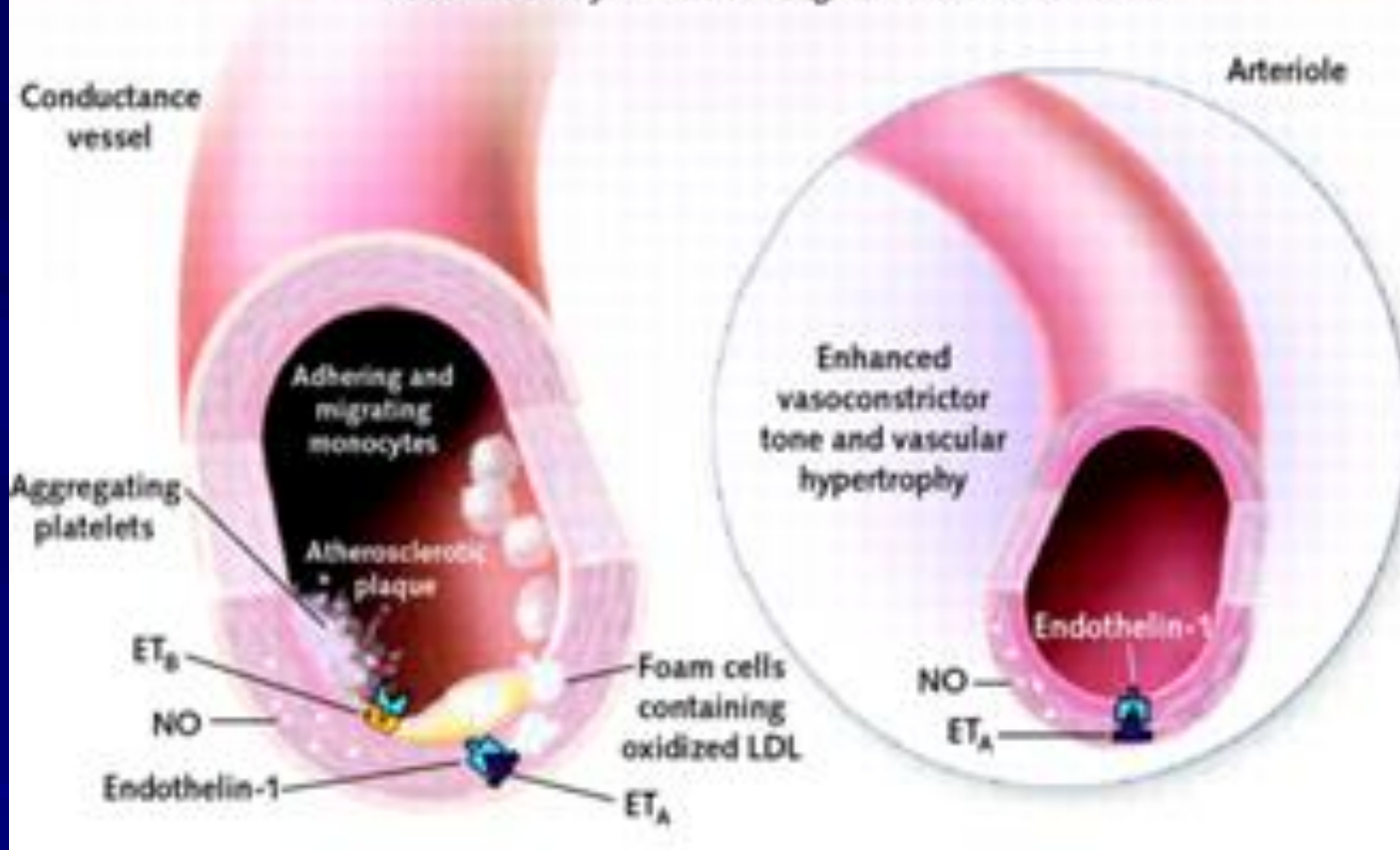
INICIO DEL DAÑO ENDOTELIAL POR EL SHEAR STRESS EN HIPERTENSION



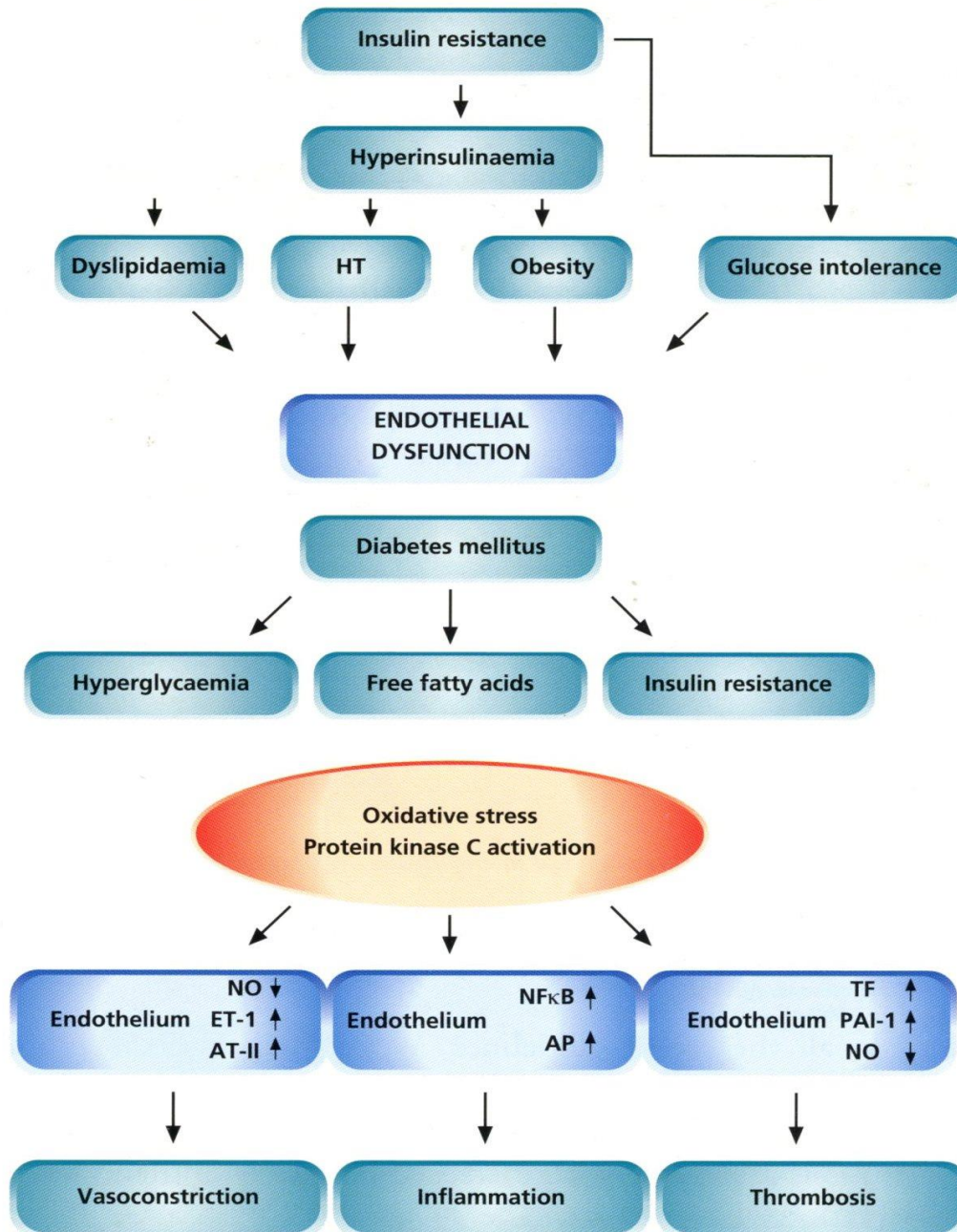


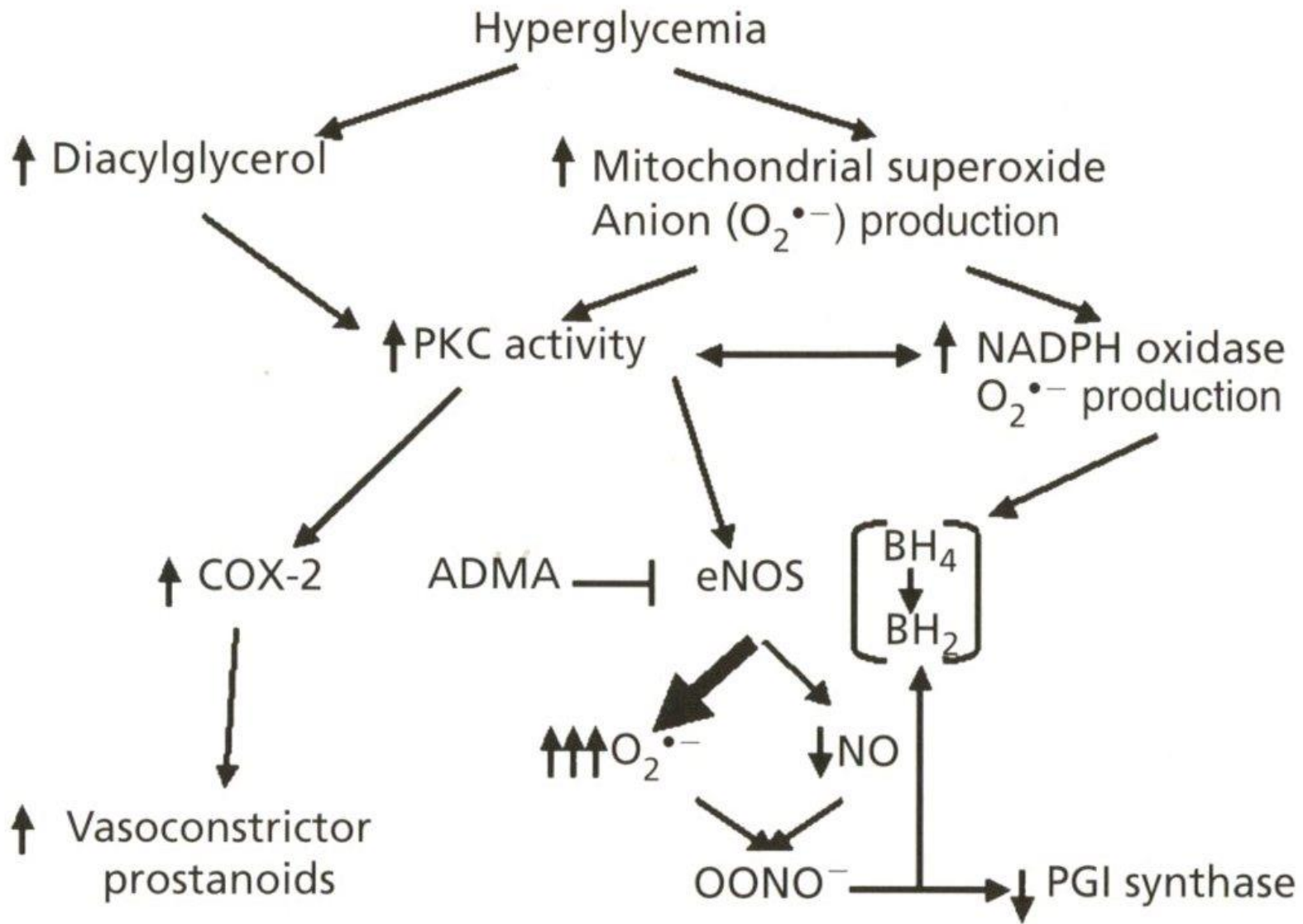
Ann Intern Med. 2003;139(9):761-776. doi:10.7326/0003-4819-139-9-200311040-00011

Endothelial Dysfunction in High Blood Pressure States

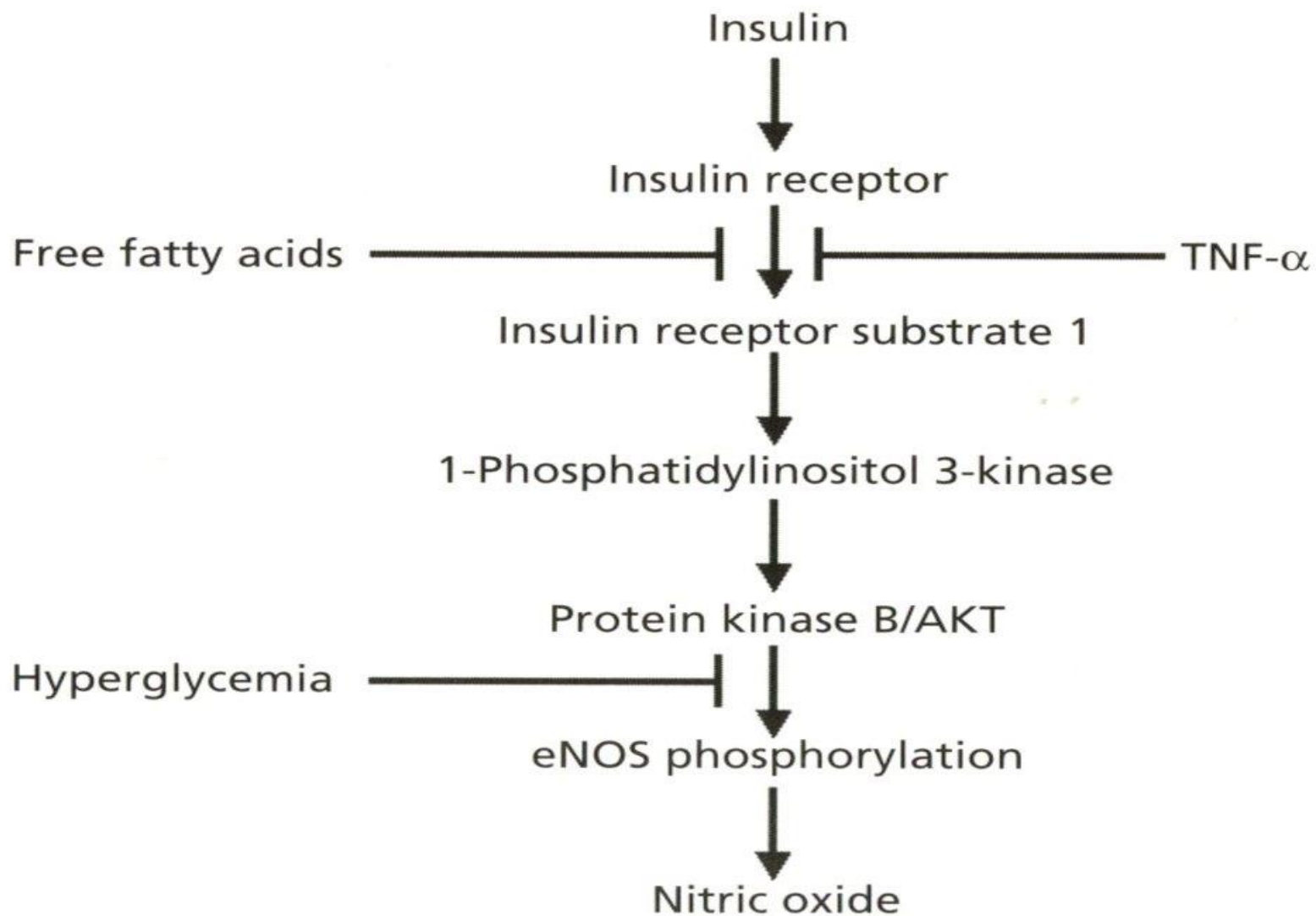


Ann Intern Med. 2003;139(9):761-776. doi:10.7326/0003-4819-139-9-200311040-00011

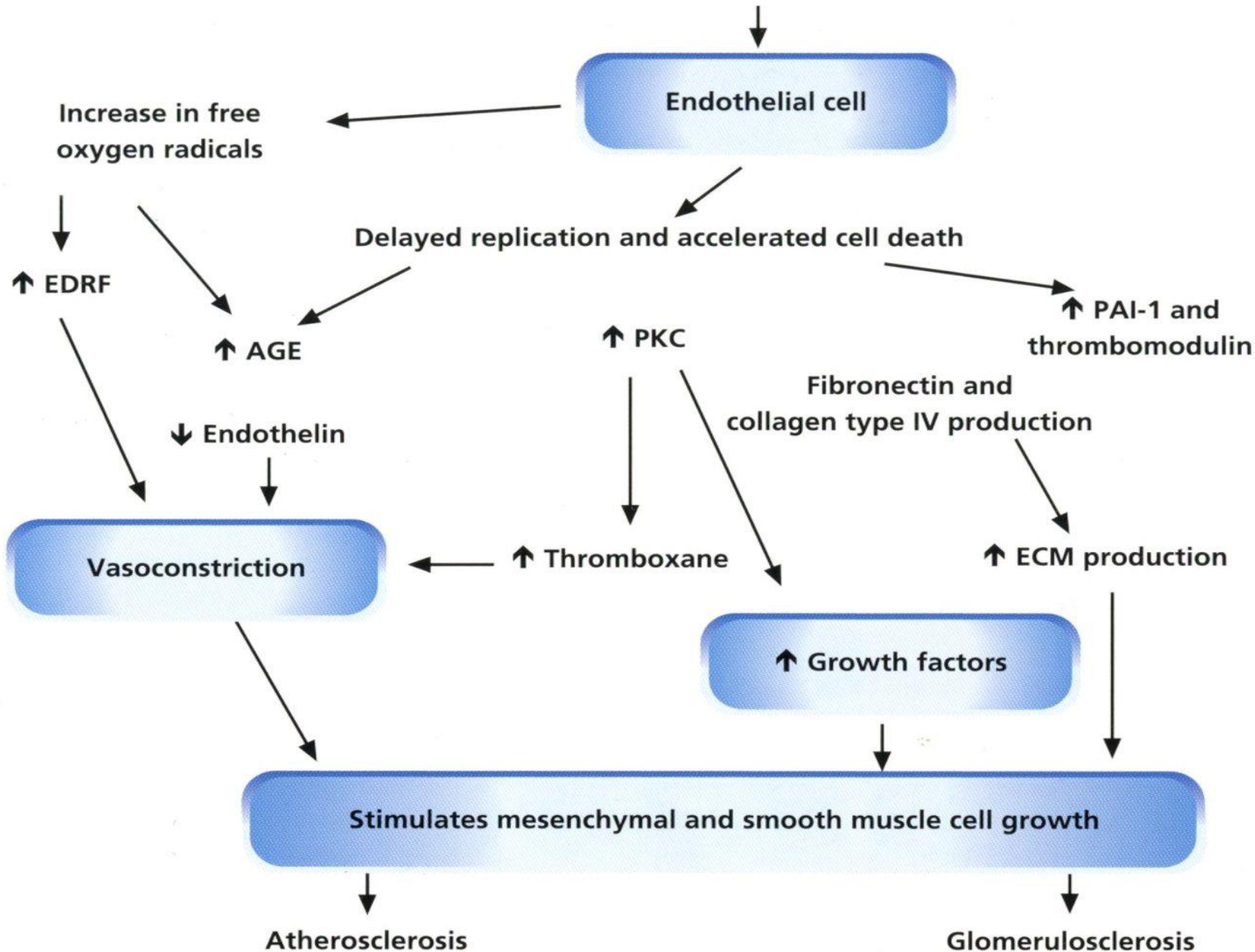




Creager, Mark. Endothelial dysfunctions and vascular disease. R. de Caterina. 2007.



Hyperglycaemia



Shear stress

Bradykinin like
endothelium agonists

Hypercholesterolaemia

Endothelial cells

H_2O_2

ROS

Decreases Gi-path activity

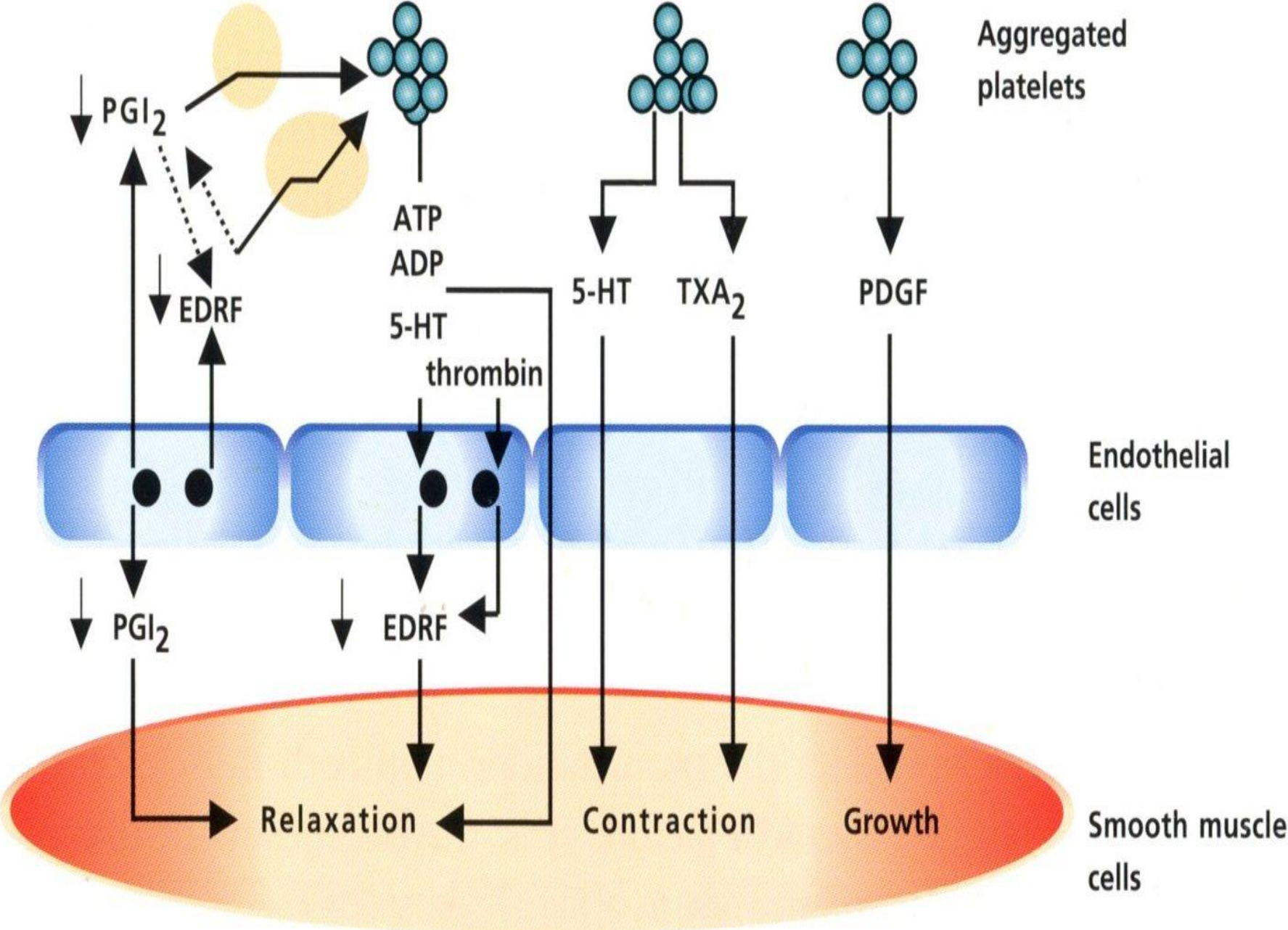
NO antagonist

Vasodilatation decreases

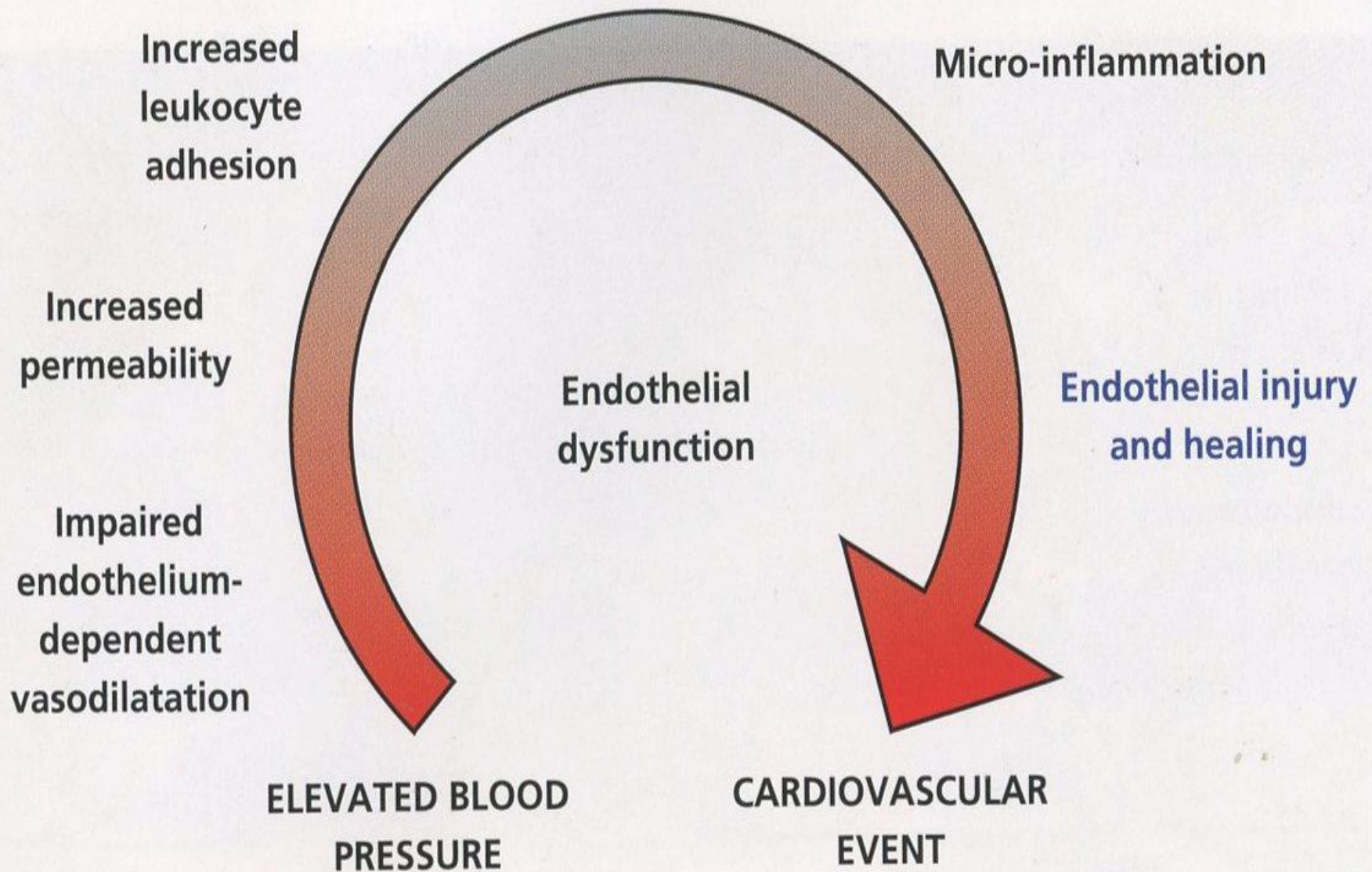
The sensitivity of sensitive
elements to Ca increases

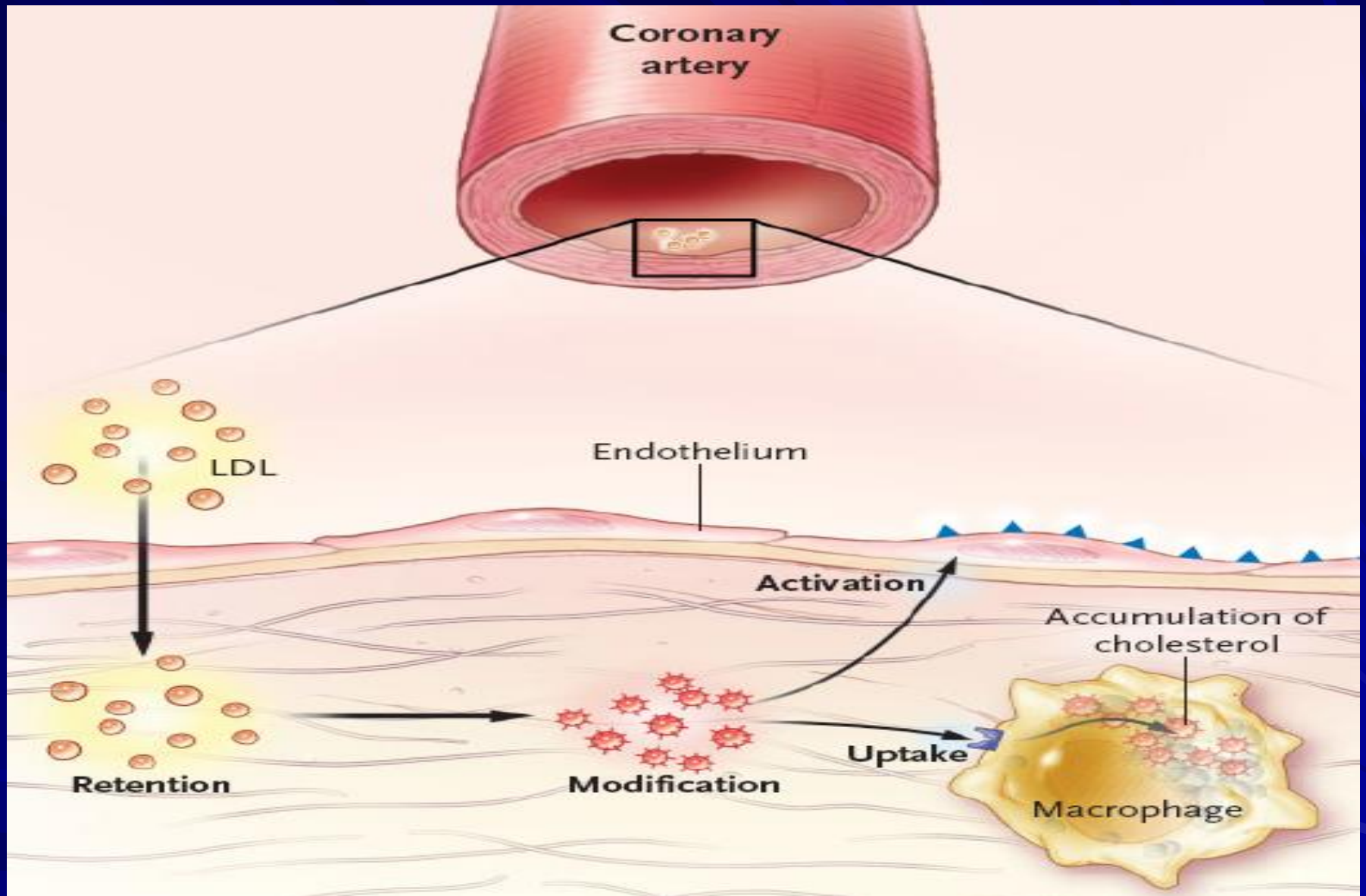
Vasoconstriction increases

Atherosclerosis

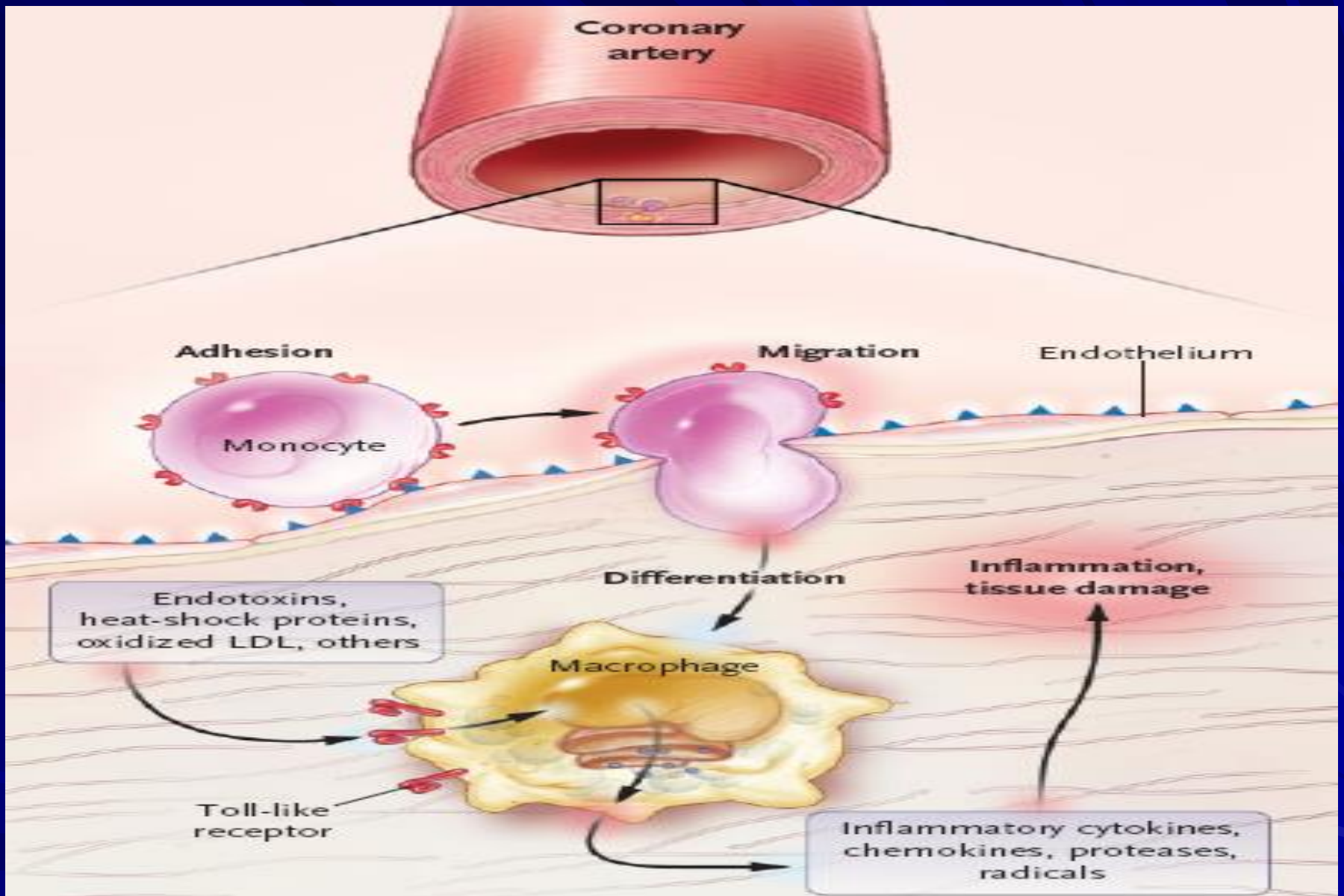


EL MECANISMO DE DAÑO ORGANICO MEDIADO POR HIPERTENSION

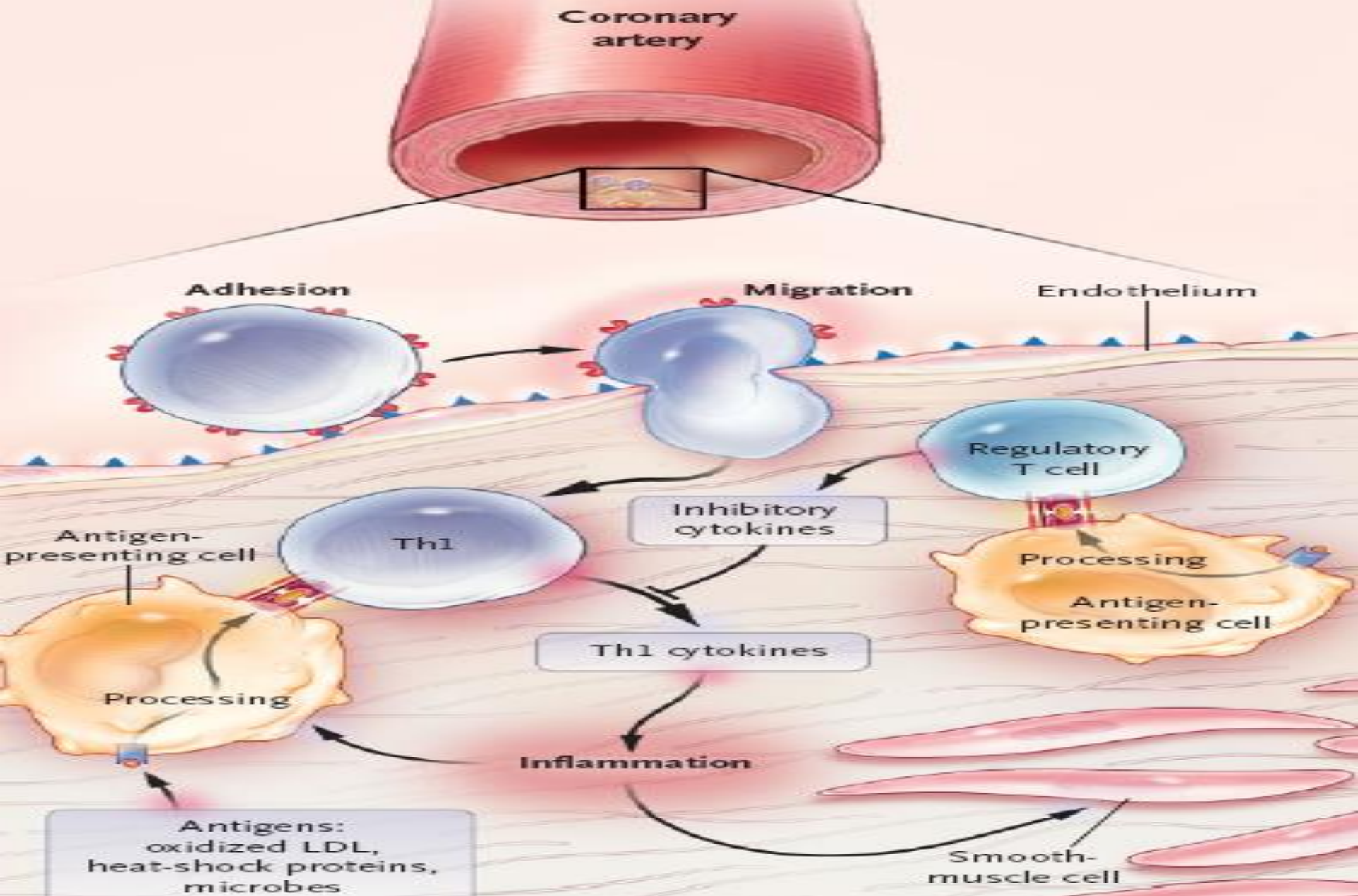




Hansson, G. Inflammation, Atherosclerosis, and Coronary Artery Disease. N.Engl J Med 2005; 352:1685-95.

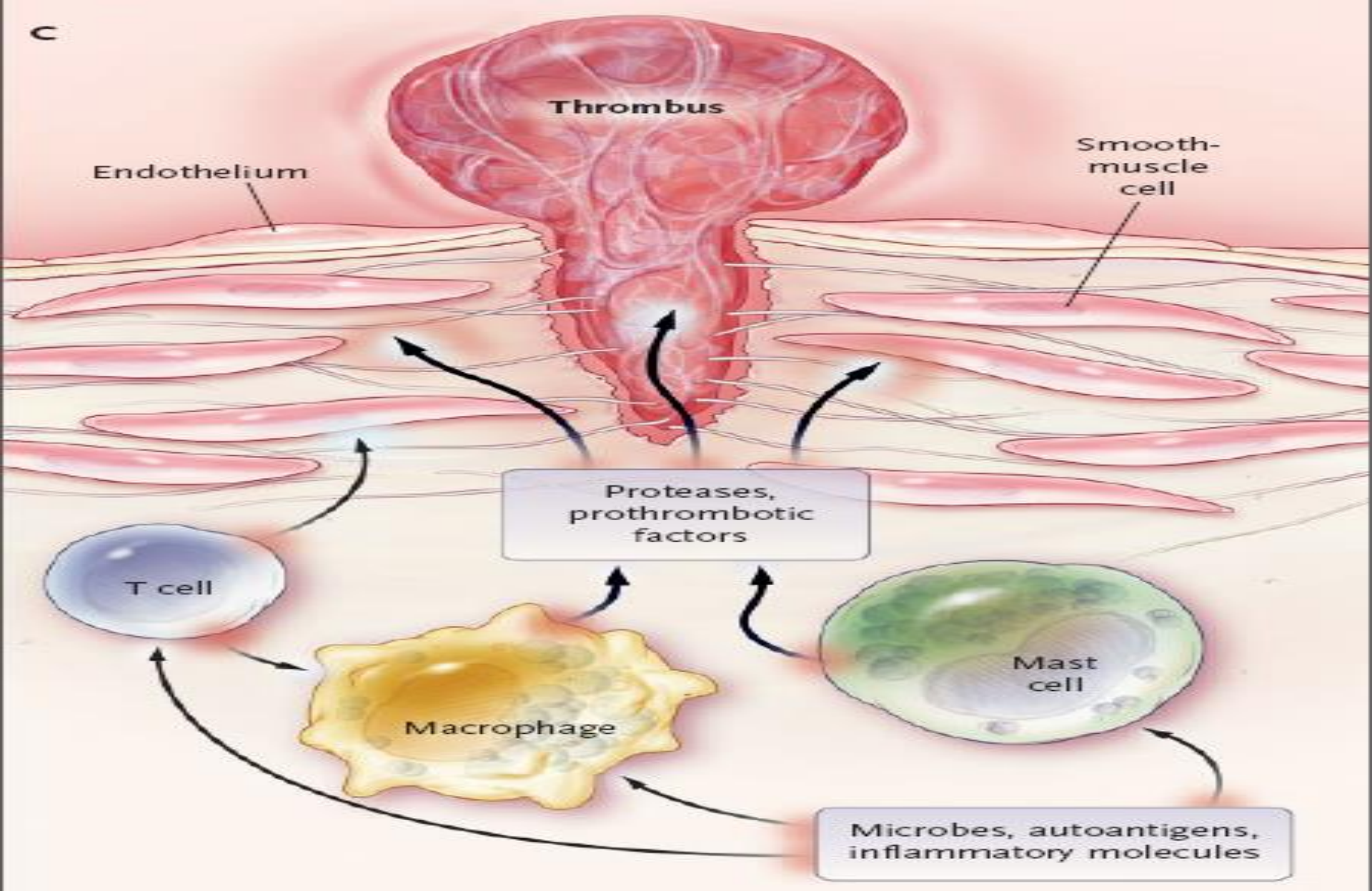


Hansson, G. *Inflammation, Atherosclerosis, and Coronary Artery Disease*. *N.Engl J Med* 2005; 352:1685-95.



Hansson, G. Inflammation, Atherosclerosis, and Coronary Artery Disease. N.Engl J Med 2005; 352:1685-95.

C

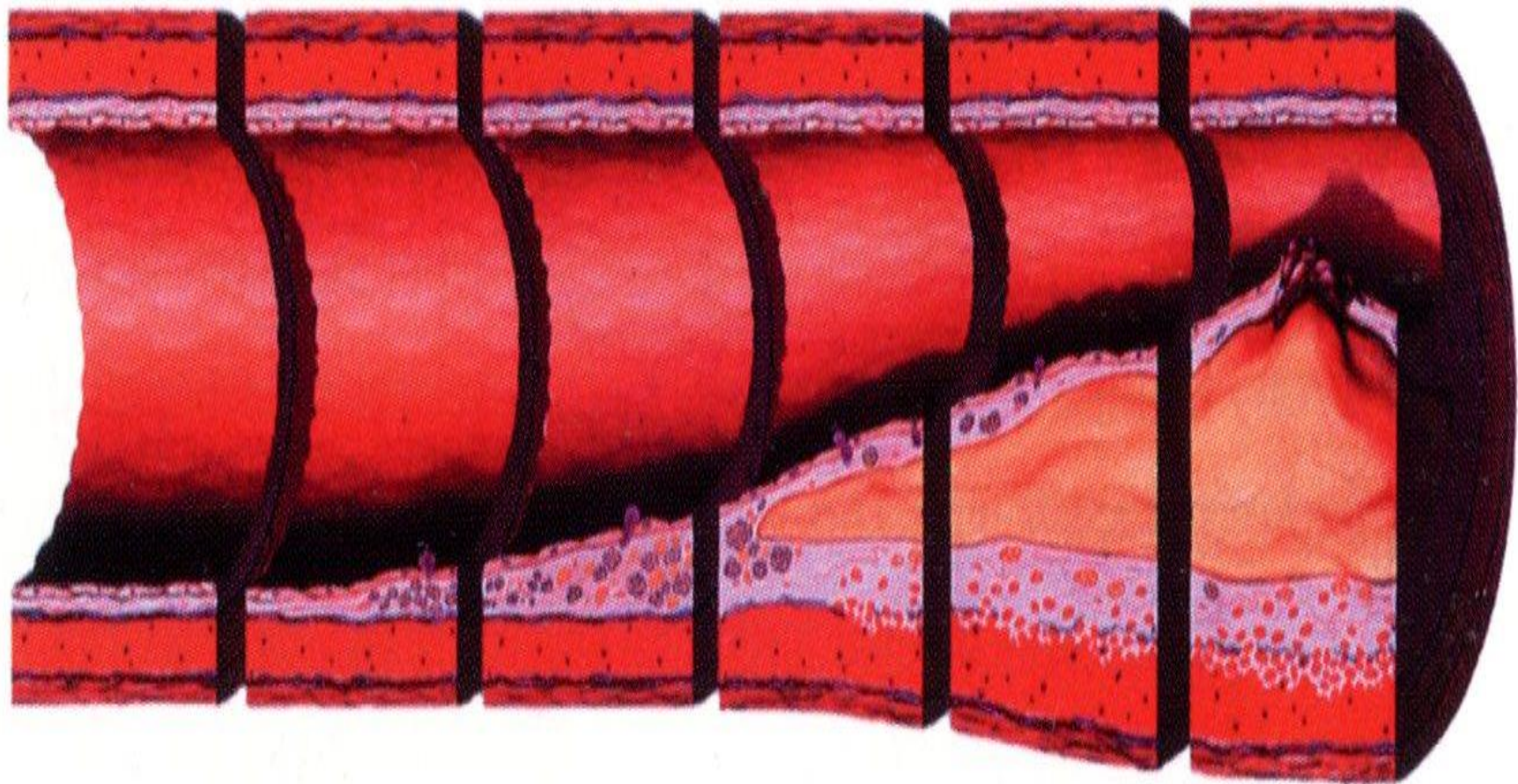


Hansson, G. *Inflammation, Atherosclerosis, and Coronary Artery Disease. N.Engl J Med* 2005; 352:1685-95.

1st decade

3th decade

4th decade



Normal

Endothelial dysfunction

Intimal thickening

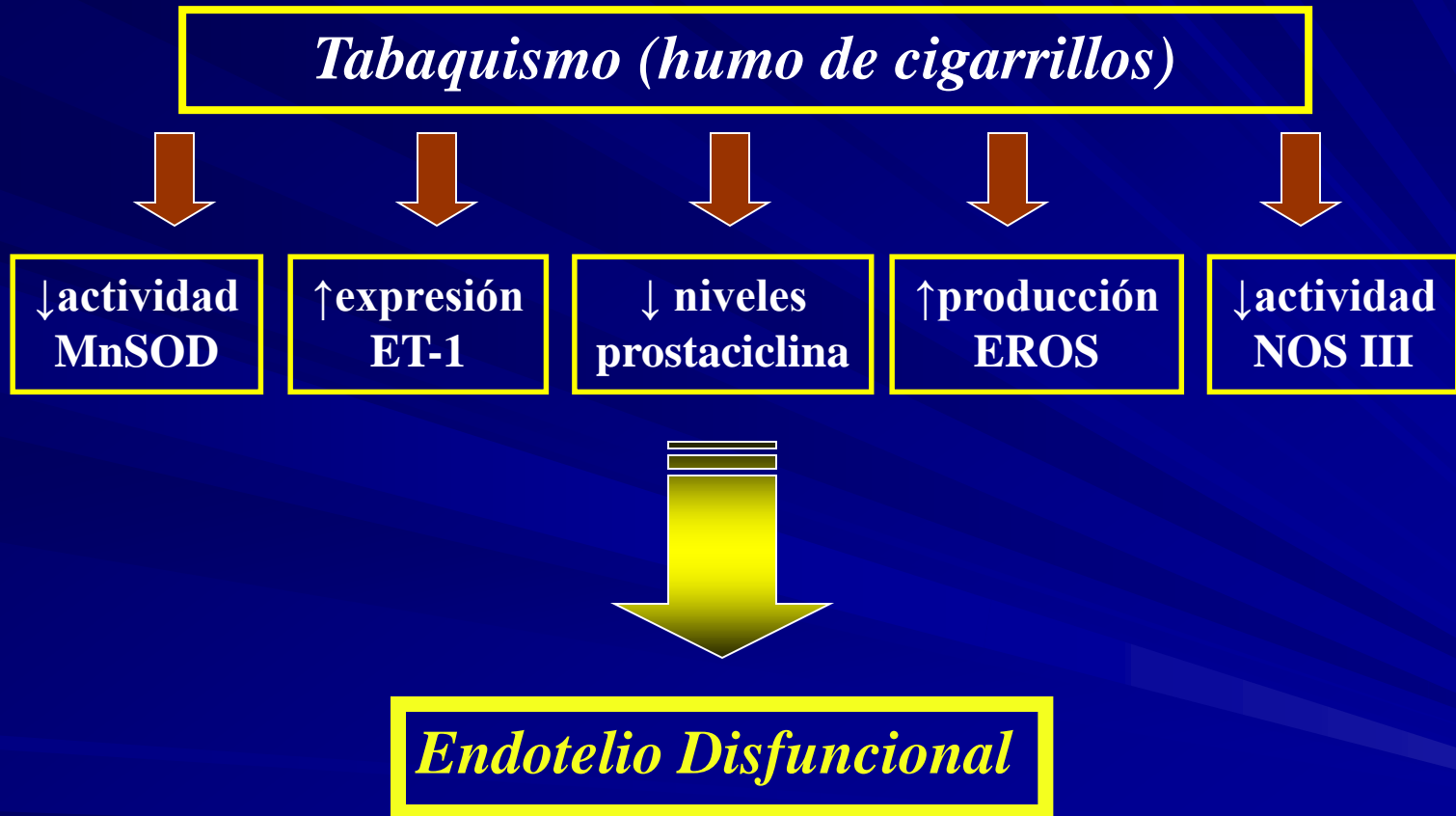
Atheroma

Sensitive plaque

Complicated plaque



Tabaquismo y DE



Infección/inflamación y DE

Infección /inflamación→ *Enfermedad cardiovascular*



Disfunción endotelial

C. pneumoniae

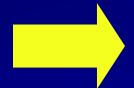
CMV

H. pylori

HIV

Enfermedad periodontal

Vacuna S. thyphi



TNF- α

PCR



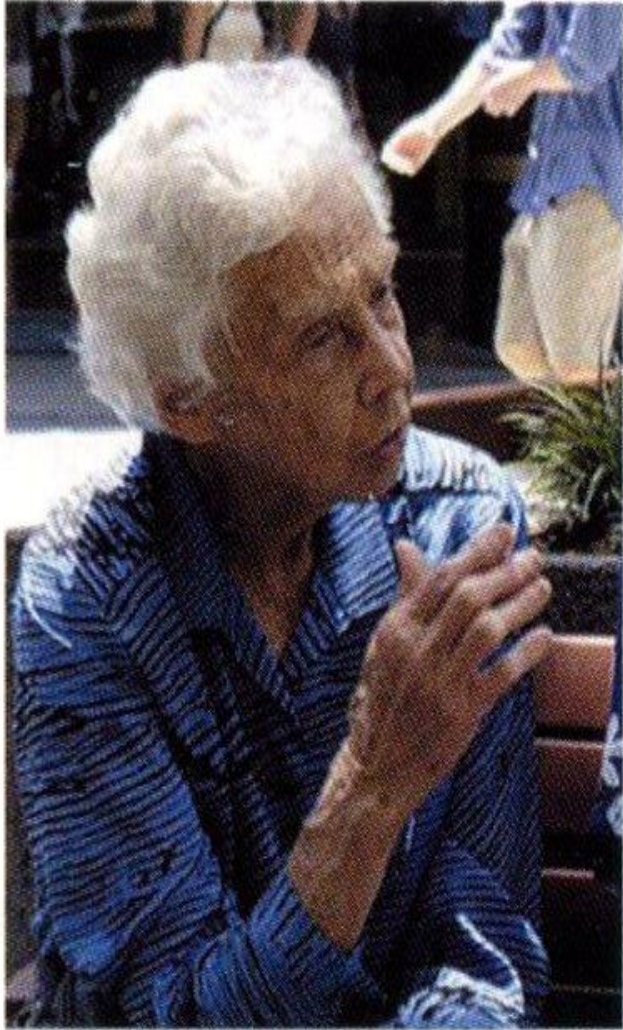
↓ *estabilidad ARNm NOS III*



↓ *biodisponibilidad NO*



Disfunción endotelial



**Disorder in the production or
activity of NO**

**Advanced age is an independent
risk factor for impairment of
endothelial-dependent vasodilatation.**

Estrategias terapéuticas. Una aproximación multifactorial



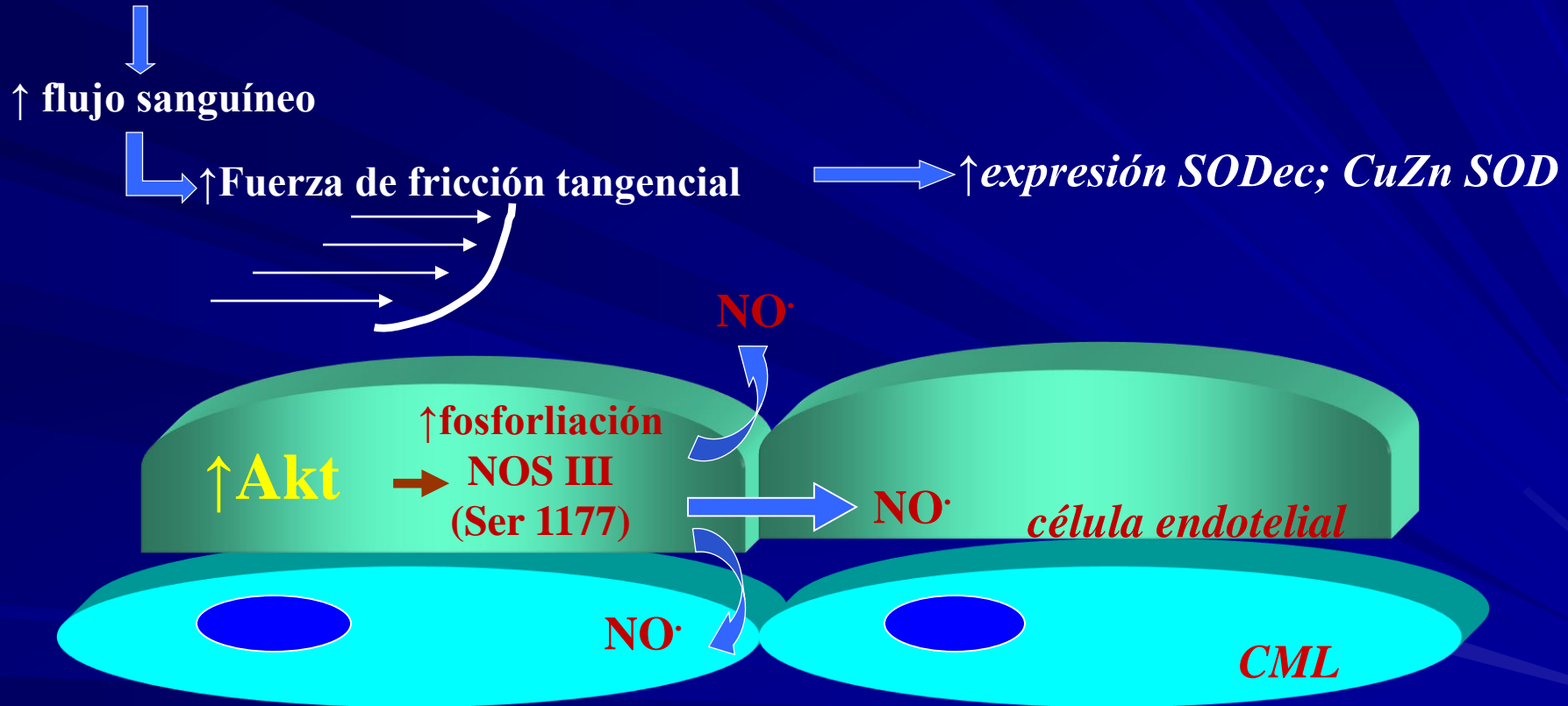
ROL DEL EJERCICIO FISICO

- Estimulante de la liberación de ON:
- Disminución del stress oxidativo.
- Inducción de la liberación de la superoxido-dismutasa extracelular.



Ejercicio físico regular. *Aktivemos* nuestra NOS III

Ejercicio físico regular



EJERCICIO FISICO

Indicación:

30 minutos al día, 5 veces en la semana,
ó 150 minutos a la semana.



ROL DE UNA DIETA SALUDABLE



Una premonición al estilo de Leonardo Da Vinci

“...Envejecemos en la misma medida que lo hace nuestro endotelio...”

Dr. R. Altschul., 1954.

Endothelium. The MacMillan Company, New York, pp. 1–155.